Chapter 2

Review of Literature
REVIEW OF LITERATURE

The chapter on Review of literature consists of two sections. The first section is the Theoretical overview and the second section is the Review of related studies.

Section A - Theoretical overview

This section deals with a brief compilation of the existing knowledge on:

1. The principles of homoeopathy
2. Low back pain, both where the physical signs are positive and where the physical signs are negative
3. Association of low back pain with anxiety, depression and wellbeing
4. The action of homoeopathy on diseases in general and low back pain in particular.

Growth of Homoeopathy as a complementary and alternative medicine

Man has been trying to control disease from time immemorial and have been successful in attaining better health. Medical knowledge has been derived from the intuitive and observational proposition and
cumulative experiences gleaned from others. Since there is an organic relationship between medicine and human advancement, any account of medicine at a given period should be viewed against the civilisation and human advancement at that time, i.e., philosophy, religion, economic condition, form of government, education, science and aspiration of the people.

The period following 1500 A.D was marked by revolution in the political, industrial, religious and medical fields. With advancing degrees of civilisation, modern medicine became the most important system of therapeutic management. The disease managements were based on directly reaching at probable diagnosis and managing the same.

The rebellion against orthodox modern medical sciences as taught and practised in the teaching hospitals lead to the development and establishment of Complementary and Alternative medicines. Homoeopathy can be said to be the longest established CAM to have arisen in Europe.

Homoeopathy differed from the orthodox medicine in the concept of diseases and their treatment. Homoeopathy claims to consider patient holistically, and treat accordingly instead of confining to the disease
part alone. Homoeopathic practice involves long hours of consultation which helps detailed understanding of the patient related to his disease as well as to his constitution and his mental peculiarities. In contrast during the first half of nineteenth century, when homoeopathy was beginning to be established, orthodox medicine believed in detailed correlation of symptoms and signs of the sick individual and the findings of the autopsy i.e., the clinicopathological correlation. This demanded very long and complex collection of disease details accompanied by heated debates between the contagionists and the anticontagionists which was beyond the comprehensibility of general public. Moreover the treatments were crude and ineffective, consisting largely of very crude polypharmacy, purging and profuse bloodletting. Homoeopathy meanwhile was interested only in the principles of treatment and the remedies. Classical homoeopathy was therefore seen to be an attractive effective, safe system, simple, easy to understand and centred on the patient as a whole and not on the pathological tissue changes which explain the peculiarity of Homoeopathy.

The popularity of complementary, alternative and unconventional medicine is increasing worldwide. Several surveys have estimated that
between 30 and 70% of patients in developed countries use these practices, depending on the population and modality according to articles by Eisenberg, 1998, MacLennan, 1996, Fisher & Ward 1994].

There is, however, a paucity of scientific research on many complementary and alternative medical (CAM) practices. A commentary in the Archives of Internal Medicine (1996) called for more research into these practices, to determine the quality and clinical efficacy. A number of authors have addressed the difficulties encountered in experimental studies of homeopathy [Linde et al, 1997, Heron, 1986, Hornung, 1991, Patel, 1987, Fisher, 1993, Linde, 1997, Linde & Jonas 1999b). While the treatment and conditions studied vary, they share the common property of representing clinical outcome research on forms of homeopathic medicine. Several independent systematic reviews have been published on these researches and have shown a surprising number of positive results, even among those trials that received high quality ratings for randomization, blinding, sample size and other methodological criteria [Kleijnen, Knipschild & Reiter 1991, Linde, 1997, Cucherat, Haugh, Gooch & Boissel, 2000].
Emergence of Homoeopathy and its basic concepts

Homoeopathy is a system of therapeutics which is based on the law of similars. Homoeopathy has logically evolved as an experimental science with inductive reasoning. All the processes starting from drug proving to therapeutic prescription are controlled by the principles of inductive reasoning. Inductive method is the scientific method which proceeds by induction as defined by Funk and Wagnall’s’ dictionary. The inductive method requires: exact observation, correct interpretation of the observed facts with view of understanding them in relation to each other and their causes, rational explanation of these facts by referring them to their real cause or law, scientific construction by putting facts in such a coordination that the system shall agree with the reality. All of these steps have played an important role in the development and establishment of Homoeopathy.

Homoeopathy was founded by Christian Freidrich Samuel Hahnemann. Hahnemann was an allopathic practitioner. He felt disappointed with the method of practice at the time. According to Hahnemann, the prevalent therapies of bloodletting, purging, puking and the administration of heroic doses of harsh drugs were barbaric and inhumane. Instead of
practising he took to translation works. In 1789, while translating “A treatise of materiamedica” by Dr William Cullen, Hahnemann first conceived the method of Homoeopathy. Hahnemann was doubtful about the reason given for the action of cinchona in intermittent fevers. The reason given was that cinchona bark cured intermittent fevers due to its astringent property. Hahnemann felt that if that was reason for the action of cinchona, then all the drugs which had astringent properties could have been curative in intermittent fevers. He decided to experiment on himself with cinchona, from which quinine was derived. He noticed that when a healthy person took doses of this drug it produced symptoms which were similar to those of intermittent fevers. After this he conducted many clinical experiments on this finding and he came to the conclusion that substances which were capable of producing symptoms on a healthy human being were also able to cure similar states in a diseased person. He also added that when as the substances used were producing a similar suffering; they are capable of curing the disease in a very minimal dose.

The principle of similars was mentioned by Hippocrates and Paracelsus which was much earlier to the time of Hahnemann. Similar to the
principle of similar which states” Let likes be cured by likes”, the concept of “Likes can be cured by likes” was mentioned in the ancient Indian medicine also. It was the experiments of Hahnemann which led to the development of this system into a separate system of therapeutics.

Homoeopathy claims that a physician’s one and only mission is to restore the sick to health which is termed as cure. The physician has to investigate what is to be cured in a disease and what is curative in various medicines and adapt the latter to the former and to understand how to preserve the health of human beings. The physician is to attend to the exiting and fundamental causes of a disease condition. The disease consists of the totality of symptoms that is thee deviation from the healthy state considered in its whole. The totality of symptoms is constructed based on the logical totality of the variations from the health and not the numerical totality of the existing symptoms. The eradication of the symptoms is considered to eradicate the disease itself.

According to Homoeopathy, it is the spirit like vital force which animates the organism and keeps the harmonious order in health. In disease the vital force is primarily deranged and this is externally
manifested in the form of signs and symptoms. By the removal of these symptoms, the whole organism is said to be cured of the disease. The totality of symptoms alone guides the selection of a remedy. The cure by using a similar remedy is based on the Nature’s law of cure-the weaker dynamic affection in the living organism is permanently extinguished by one that is very similar and stronger than it, but differing in its kind. The human body is much more disposed to let its state of health be altered by a medicinal force than by a natural disease.

The successful application of the law of similars depends entirely on the concept of individualisation and susceptible constitutions which form the corner stone of homoeopathic practice. Homoeopathy considers man not only as an individual but as a complete unit in himself of which all parts together comprise a well balanced whole. Not a single part is being ill but it is the part of a sick individual. The sick individual is related to his environment and circumstances.

The concept of individualisation takes into consideration the total response of the organism to the unfavourable environment. This total response is seen through signs and symptoms on three planes-emotional, intellectual and physical-the planes through which the life
force manifests itself. While assessing this total response, the homoeopathic physician gives fundamental importance to the causative factors and to the peculiar characteristics of the ailment, especially the mental characteristics. The concept of susceptible constitution is reflected in Hahnemann’s Theory of Chronic Disease which takes into consideration the hereditary influence and predispositions that play an important role in the genesis of the disease.

Homoeopathic therapeutics therefore affords unlimited opportunities of influencing favourably the mental processes and of mitigating the adverse influences of the adverse predispositions to illness, hereby leading to a better adaptation of the patient to his environment. It represents thus, the practice of constitutional medicine at its best and reigns supreme in the field of psychiatry and psychosomatic medicine.

The signs and symptoms reveal to the trained homoeopathic physician not only the disturbed economy within, which we term disease but also the curative agent which will set right the disturbed economy. The physician is thus able to detect earliest beginnings of disease when structural changes have not yet occurred in the cells. The physician can plan definite curative treatment at a stage when diagnosis is possible.
In no other system of therapeutics can such a treatment be administered till an exact diagnosis is established. The physician trained in homoeopathic methodology must be able to observe and interpret the signs and symptoms which manifest themselves. The symptoms which in the ordinary circumstances are discarded as irrelevant too are considered for individualisation and thus for the totality of symptoms.

Homoeopathy has its own exact methodology of case taking, of preparing drugs, of eliciting the effect of drugs, of selecting the remedy according to the law of similars, of rules governing its administration and of observing minutely the various effects so produced on the diseased. All this knowledge has been gained through ‘pure’ experience and not through mere reasoning’. Homoeopathy is therefore a system of scientific, constitutional drug therapeutics with wide potential.

**Homoeopathic Principles**

Homoeopathy is based on certain fundamental principles which form the basis of its unique philosophy. They are

- **Law of Similars**
- **Law of Simplex or single remedy**
Law of minimum dose

Doctrine of drug proving

Theory of chronic diseases

Theory of Vital Force

Doctrine of drug dynamisation

**Law of Similars**

The Law of Similars is the fundamental Law on which the system of Homoeopathy is constructed. The ancient Hindu medical texts have the earliest references to it. This principle, though not in a developed form, had been mentioned in the writings of Aristotle, Hippocrates, Paracelsus and Von Haller. Galen's strong rule in the medical world, however, swept off everything before it, and the Law of Similars became totally submerged till the genius of Hahnemann rescued it and placed it on a sound experimental footing. Hahnemann in his Organon of Rational Healing states that the weaker dynamic affection is permanently extinguished by a stronger one if the latter is similar to the former (while differing in its kind) in its manifestations. So the remedy which has a similar manifestation in the healthy state will be curing the disease state.
The reasoning for the law of similars is in the following manner:

1. Drugs cure by virtue of their capacity to effect a change in human beings.

2. This capacity could be determined only through actual experiments on the healthy.

3. The change thus produced, which could be termed as a drug-induced-disease, could either be similar or dissimilar to the state in the patient, which is the natural disease.

4. Drugs, therefore, could be selected as remedial agents on the basis of their known capacity to produce either a similar or a dissimilar state.

5. Pure experience alone will enable one to arrive at the right conclusion.

6. Now, all previous experience indicates that drugs selected on the basis of the law of dissimilar never cure; they only suppress the manifestations of disease.

Therefore, drugs selected on the basis of the law of similar alone will act as curative agents.

The Law of Similars, in its application, demands exacting standards of precision, since an exactly similar drug alone can prove curative. This exact similarity can be ensured only if the patient is observed closely as an individual entity of the disease, making a special note of the
characteristic features that will positively separate it from another instance of the same disease. This helps in individualizing the diseased person from similarly diseased individual.

The drug-effects on the healthy will also have to be studied equally closely. This has been done by drug-proving.

**Law of simplex**

The insistence on the exact similarity led to the use of the Single Remedy, as only one remedy can be exactly similar at a given time. At the time of Hahnemann polypharmacy was very much in use, the constituents of these remedies changing from practitioner to practitioner. The remedy selected, according to Homoeopathy should have the ability to produce similar affections in the healthy state. Each and every drug is proved independently. Materiamedica which is the record of symptoms of the proven remedies is built on the observed effects of the drugs given singly. This is true with the case of planned proving or accidental proving. Only one remedy can be most similar at any given time to the condition of any given patient.
**Law of minimum dose**

The minimum dose means the quantity of a medicine which produces the least possible excitation of the vital force sufficient to produce the necessary change in it. This helps in reducing the unnecessary aggravation.

The progressive reduction in the quantity of drug on a definite scale, ensuring adequate dispersion in the diluting medium through the processes of trituration and succession, led to the discovery of potentization. Potentization increased considerably the capacity of drugs to affect the life force and, incidentally, enlarged the scope of drugs as curative agents.

The exacting standards demands from the Homoeopathic physician close observation of the changes brought about by the similar remedy in the diseased state. These changes were subsequently classified and an attempt was made to interpret them in terms of the inherent susceptibility of the patient, the nature and stage of disease and the capacity of the drug to affect the life force. This logically led to certain inferences and conclusions about the probable outcome in a given
instance. All these observations stand closely knit together under the heading of Remedy Reaction.

The rules governing the dose and the repetition of the similar remedy are based on the understanding of the fundamental quality of susceptibility and the correct appraisal of the Remedy Reaction. All these constitute the Homoeopathic Posology.

**Doctrine of drug proving**

The homoeopathic drugs are prescribed based on the process of drug proving. Drug proving is a systematic investigation of pathogenetic (disease producing) power of medicine on healthy human beings of different ages, of both sexes, and of various constitutions (Hahnemann, 2006). These recordings of drug proving give the only reliable knowledge of medicines which is very essential to cure disease homoeopathically. Different medicines must be proved thoroughly in order to obtain full details of their curative properties. The drug must be proved on human beings because animals do not give subjective or mental symptoms and also the effect of the same drug on animals and human beings are different. The finer subjective symptoms will not be obtained in animal proving. The drugs are proved on healthy human
beings because in a diseased individual the symptoms of the drug and the disease become mixed together and pure drug symptoms will not be obtained. Moreover the action of the drug on the sick person is different from that of in a healthy individual.

**Theory of chronic diseases**

Homoeopathy considers that the chronic diseases are caused by chronic miasms (Hahnemann1991). The miasms are psora, syphilis and sycosis. Psora is the fundamental cause and producer of innumerable forms of diseases. It is the mother of all diseases and at least 7/8th of all chronic maladies spring from it while the remaining one eighth spring from syphilis and sycosis. Cure is only possible by proper antimiasmatic treatment.

**Theory of vital force**

Homoeopathy stresses on the existence and operation of a vital force in a living organism. The human organism is a triune entity consisting of body, mind and spirit. According to homoeopathy this spirit which animates the spirit which is responsible for the different manifestations of life is vital force. Hahnemann speaks of the vital force in aphorism 9 of his ORGANON OF MEDICINE “as the material organism without
the vital force is capable of no sensation, no function, no self preservation; it derives all sensation, and performs all functions of life solely by means of the immaterial being (the vital force) which animates the material organism in health and disease.”

In the healthy condition it is the vital force which maintains normal functions and sensations of the organism. But when the vital force is primarily dynamically deranged by morbific influence, it causes abnormal sensations and functions which are manifested outwardly through the material body as abnormal signs and symptoms, the totality of symptoms which constitute the disease.

**Doctrine of drug dynamisation**

Homoeopathic drug dynamisation is the process by which the medicinal properties of the drug substance which is latent when the drug is in the crude form, becomes awakened and activated to a higher degree (Hahnemann, 2006).

According to Close (1990), Homoeopathic potentisation is a mathematic, mechanical process for the reduction, according to scale, of crude, inert or poisonous medicinal substances to a state of physical
solubility, physiological assimilability and therapeutic activity and harmless, for use as homoeopathic healing remedies.

Drugs are potentised by two methods:

1. Trituration – for insoluble substances
2. Succussion – for soluble substances

Objectives of potentisation are:

1. To reduce quantity of medicinal substance which helps to avoid unwanted medicinal aggravations and side effects
2. Homoeopathy believes that vital force which is the seat of disease is dynamic in nature and can only be cured by the dynamic power of medicine, not in its natural quantity
3. By this process the most virulent and deadly poison are not only rendered harmless, but also transformed into beneficial healing remedies
4. Substances which are medicinally inert in their crude natural state are rendered active and effective for healing the sick.
5. The medicinal quality of drugs which are more or less active in their natural state are enhanced and their sphere of action is broadened by this process.

6. The action of potentised medicine is deeper, longer and widespread.

The method of drug dynamisation and selection of remedy based on symptom similarity makes homoeopathic system different from other systems of therapeutics.

**Concept of disease in Homoeopathy**

Homoeopathy considers that the diseases are due to the derangement of internal vital force, which animates the organism and keeps the organism in harmonious healthy state. This derangement is manifested externally in the form of symptoms. The disease treatment is based on the annihilation of the symptom picture. The term symptom means the externally manifested picture of the internal deviation of the vital force from the healthy state. The symptom totality includes the logical totality of all the symptoms the patient is suffering from. In considering the totality of symptoms the general symptoms are given the first preference which includes symptoms that affect the patient as
a whole. The general symptoms include the mental as well as physical symptoms. Next in importance to the generals are the particular symptoms. The particulars indicate the symptoms which are confined to a particular region. The presenting complaints of a case too may be coming within the category of particular complaint. Common symptoms come next in importance to the particular symptoms. The common symptoms are those symptoms which are common to most of the sufferings and hence of least importance in individualising a case for remedy selection.

Homoeopathy divides diseases into acute and chronic. The acute diseases are those which have a specific time span and specific prognosis. The acute diseases will be annihilated of its own either resulting in complete cure or in the death of the patient. (Org Aph72, 73). Chronic diseases are caused by chronic miasms. These diseases will not be cured of its own. They will gradually go from one organ to another; affect deeper tissues and have a tendency to relapse. They will not be fully removed by an agent who will not cover the whole symptom picture. The symptom picture necessarily involves not only the presenting complaints but the trivial symptoms which are usually
discarded by the other systems of therapeutics. Sometimes these seemingly trivial symptoms may be very important in individualising a case and thus differentiating the particular case from similar cases. The chronic diseases include all of the diseases which are not acute.

The chronic miasms are divided into three basic divisions—psora, syphilis and sycosis. Except for those diseases which are sexually transmitted all the other diseases are included under psora. Psora includes affections which are functional in nature and do not have a structural derangement. Sycosis and syphilis are characterised by structural changes. The miasm sycosis includes those conditions where there is a tendency for structural over growth as in the case of cancer. The miasm syphilis includes diseases where degenerative changes are more prominent.

Homoeopathy considers that the source of health and disease is not material but is in the spiritual immaterial life principle which is integrated with body and mind in the human organism. Health and disease are different states of the organism. Conditions of ease or health and disease or suffering are qualitative states. As life endows the body with sensation and functions, the alteration of sensations and
functions in diseases implies the qualitative change of the life principle. Any agent by virtue of some inherent quality can affect the qualitative life principle in such a way as to produce disagreeable sensations and functions. This agent is termed the morbific agent. A morbific agent is a concrete reality and quality is an abstraction. In universe no quality can exist by itself other than being embodied in a substance chemicophysical, biological or psychological. The concrete agent with the particular quality acts as a vehicle for a particular quality or quantitative force. When the morbific agent comes in contact with the body of a concrete organism, the action and reaction between them result in a disease. The quality possessed by one acts on the quality inherent in the other and leads to some changes in the qualitative condition of the organism. This qualitative process is mentioned as the dynamic action. In treating the disease, nothing is taken out or nothing is added except for the qualitative interchange between an organism and a drug agent. All we have to do in curing a sick individual is to change the morbid vital process to its original normal vital process which in turn will change the altered tissues into normal tissues.
The disease should be studied in its present, past and future states. A disease does not appear suddenly or accidentally. It manifests at a given time and within a certain measure of space, marking a totality of hereditary or acquired conditions and morbid predispositions.

The ground for every acute or chronic disease is prepared or conditioned by a group of factors depending on the external and internal influences. This in turn disturbs the organic rhythm, equilibrium, psychological and physical dynamics. The microbes are given importance as the causative agent only next to the predilection to disease. The chronic diseases starts from the disorders of sensation proceeding to the disorders of function and then to the disorders of structure. Diseases unfold themselves under a particular form, having connection not only with their origin but above all, with the reaction of each individual subject. If this morbid process is not checked, it may proceed into structural changes which are hence necessarily the end results of the disease only.

Whenever there is a derangement in the healthy state of the body, symptoms are produced in physical, emotional and intellectual planes. In natural diseases, as well as in artificial diseases produced by drug
proving we find that the mental and somatic symptoms appear inseparably. Hahnemann opines that the mind and body are inseparable. Illness is the result of biological as well as physiological events. Certain stresses manifest through various peripheral nerves in the form of somatic symptoms or through the mind leading to mental symptoms or as the change in personality. In some cases one outlet is choked and the symptoms are manifested through the other outlet. Thus in extremes of cases purely physical conditions or purely mental diseases are produced.

In certain disease states only very few symptoms are presented. Such diseases are known as one sided diseases. Here the paucity of symptoms may be either due to improper case taking which can be managed by proper retaking of the case. This may also happen when the body is not sensitive enough to manifest the disease. The local maladies, like low back pain, skin diseases etc too come under this category.

Similarly, diseases where mental symptoms predominate or are the sole presentation too are categorised as one sided diseases. In Aph 210-230 (Hahnemann, 2006) mentions about the one sided diseases, like mental diseases. The mental diseases are considered as chronic
diseases affecting the whole psychodynamic entity where the brunt of derangement has been shifted on the mental aspect of the human organism after the physical disturbances have been suppressed by non homoeopathic management or through some other natural causes.

In certain states the mental symptoms are more manifested than the corporeal disease (Aph 215, Hahneman, 2006) which decline to the length of expressing as the mental malady alone. In certain conditions where the mind is primarily deranged, the altered psychological conditions maintain the body in a psycho pathological state. In such states there may be sudden outbreaks of mental symptoms.

Yet another group may be having mental states where it is difficult to determine whether the mind or the body is at fault. There may be either physical or mental cause. In such states patient may express physical conditions where a proper physical diagnosis cannot be made. These can be corrected by friendly exhortations or sensible advices or serious representations. These are conditions where the psychotherapy may help. Very often the causes of mental derangement lies in the failure of the person to self adjust to the situation, which can result in the
disintegration of the personality and misfit for the factual reality. Somatoform disorders too, probably, come under this category.

**Concept of treatment**

Therapeutic concept of Homoeopathy is based on symptom similarity, which Homoeopathy claims to be the Nature’s law of cure. Nature’s law of cure states that the weaker dynamic affection in a person which we mention as the disease, is permanently extinguished by the one that is very similar and stronger than it but differing in its kind. Human body is much more disposed to let its state of health to be altered by a medicinal force than by a natural disease (Hahnemann, 2006).

Therapeutic agents or drugs are proven on healthy human beings and the changes which appear in the form of symptoms are noted. The proving is done on wide range of circumstances and on different individuals of different cultures and regions. Materia medica is the text book which contains an authentic collection of symptoms arranged systematically. After detailed case taking, the physician classifies and evaluates the symptoms into general, particular and common symptoms. Based on the symptom totality picture thus evolved the physician selects a most suitable remedy from the material medica. The symptom totality helps
to individualise a patient from another patient of the same diagnosis and
differentiate a suitable drug from a group of drugs.

The successful application of the Law of Similars entirely depends on
the concept of individualisation and susceptible constitutions which
form the cornerstone of homoeopathic practice. The concept of
individualisation takes into consideration how each and every
individual reacts to unfavourable stimuli in his own way which forms
the totality of symptom. The analysis and evaluation of symptoms
leading to totality, the physician should be free from prejudice,
possessed of sound senses, complete and correct observation of facts,
and faithful in properly recording facts through detailed case history
studying. Each case has to be considered different and importance
should be given to the minutest of details.

In one sided diseases like local maladies and mental diseases too, the
remedy is selected based on the totality of symptoms. But when the
symptoms are very few or when there are no characteristic symptoms, the
treatment is based on the existing symptoms, whatever few is there. This
may not help to fully cure the patient but it helps to palliate the case or
may help to bring out the dormant symptoms which in turn help in
understanding the clearer picture of the case. This is true with back pain disorders both where a diagnosis is possible and without a diagnosis.

Roberts, 1992 claimed that the Homeopathic law establishes a definite relation, not only between proved drugs and diseases, but between all the unexplored medical wealth and the undeveloped requirements of sickness. He said that the Homeopathic law cannot be limited to a small group of conditions but the limitations rest entirely with our ignorance. He claimed pain to be one of the experiences from which human life has continuously tried to get rid of. Pain is a blessing in disguise. Pain helps to recognize the trouble. Pain helps the physician to recognize the location of troubles. He opines that the treatment of pain as a single trouble and the fear of having pain led to a wider use of narcotic than any other single factor. He says that pain is a part of the total symptomatology. The pain and its characteristic like the type, duration, modalities, and concomitants helps in characterizing pain. The pain along with other symptoms helps in selecting the curative remedy.

**Treatment in mental ailments**

Hahnemann says “I can confidently assert, from great experience, that the vast superiority of the homoeopathic system over all other
conceivable methods of the treatment is nowhere displayed in a more triumphant light than in mental and emotional diseases of long standing," (Hahnemann, 2006, § 230)

Historically homeopathy has been used in the treatment of psychiatric conditions since its inception in the eighteenth century, and over 200 years of homeopathic literature suggests that patients with a broad spectrum of mental health concerns seek homeopathic treatment. Many prominent homeopaths beginning with the founder Samuel Hahnemann to more current day practitioners like Bailey 2010; Reichenberg-Ullman & Ullman, 2002; Saine, 1999; Shalts, 2010; van der Zee, 2010; Whitmont, 1980 had written extensively about the treatment of people with mental health conditions. The most commonly treated conditions fall into the categories of anxiety and mood disorders, reflecting known prevalence of these disorders. It is apparent however that homeopaths are treating people with a full spectrum of mental health disorders including psychoses.

In cases where the presenting condition is a mental disease like in other one sided diseases, the treatment can be directed against the existing symptoms. This may probably help in bringing out the full symptoms
thus helping in prescribing the better similimum. So the therapy is like in any other diseases, directed to select the most similar remedy based on the symptom similarity. In certain cases it is difficult to determine whether the mind or the body is at fault and the patients express physical states without proper physical diagnosis. There may be either physical or mental causes. These can be corrected by friendly exhortations or sensible advices or serious representations. These are conditions where the psychotherapy may help. Very often the cause of mental derangement lies in the failure of the person to adjust him to the situation, which can result in the disintegration of the personality and misfit for the factual reality. Somatoform disorders too are probably under this category. Irrespective of the suffering the most similar remedy is selected in treating the condition. Even though there is no possible physical or mental disease diagnosis the patient demands a remedy through the symptoms which are the deviations from the healthy state.

**Controversies related to Homoeopathic management and research**

*The Lancet* of August 27, 2005 featured a cluster of articles highly critical of homeopathy which attracted considerable media attention
They mentioned ‘homeopathy is no better than placebo’ based on a meta-analysis of clinical trials of homeopathy compared with clinical trials of allopathic (conventional medicine) Shang, 2005. The meta-analysis was accompanied by a short, anonymous editorial entitled ‘The end of homoeopathy’ calling for ‘doctors to be bold and honest with their patients about homeopathy's lack of benefit and commentary from the Dutch epidemiologist Jan Vandenbroucke (2005), reflecting on the ‘growth of truth’, including the relationship between bias, background knowledge and the concordance of clinical results with laboratory science findings. Vandenbroucke concludes that the ultimate proof of the validity of a scientific or medical idea is the extent to which it changes reality.

One of the most important reasons that orthodox physicians and drug companies disliked homoeopathy was the inherent criticising nature in homeopathic approach on the use of conventional drugs. Homeopaths were primarily critical of the suppressive nature of these drugs. They felt that these drugs simply masked the person's symptoms, creating deeper, more serious diseases.
Jonas 2001 says that the main issue relevant to assessment of research quality is that the theoretical and clinical approaches of homeopathy use different diagnostic and therapeutic taxonomies than conventional medicine. Unlike conventional medicine that attempts to isolate cause–effect links between single treatments and specific diseases, homeopathic medicine focuses on the stimulation of broad healing processes that have influences on a variety of conditions and symptom patterns [Hornung & Linde, 1991]. Current classical homeopathic practitioners use complex pattern recognition procedures (often computer assisted) to initiate treatment, evaluate patient response and adjust therapy. It is within this so-called "holistic" paradigm that researchers continue to attempt a critical examination of the specific effects of homeopathic therapies as they relate to conventional diagnostic categories. Lack of homeopathic expertise by researchers or difficulties in modification of homeopathic practice goals to fit conventional diagnosis-based research designs can cause confusion in the design and execution of clinical trials and in the evaluation and interpretation of results.
The differing frameworks also complicate our ability to comparatively evaluate these systems. [Heron1986, Hornung1991, Patel1987, Fisher & Greenberg 1993, Linde et al., 1997]. The lack of support for homeopathic therapies among Western practitioners stems, in part, from the scarce quantity and perceived poor quality of homeopathic clinical research. Jonas2001 conducted a "Systematic Review" for evaluation. The study reflected that the placebo influences were common to both conventional and homeopathic therapies and the possibility of selection bias in favour of homeopathy for many studies were reported. Both of these factors would falsely elevate the number of positive studies reported in homeopathic research. On the other hand, homeopathic physicians spend considerably more time per visit with patients than conventional physicians [Jacobs, 1998]. The comprehensive interview and long-term follow-up undertaken as part of homeopathic case management increases patient-doctor interaction and likely enhances expectancy and placebo effects. This may make it more difficult to detect and isolate any additional effects from homeopathic preparations, if these occur. Combined with small sample size this might falsely increase the number of negative studies reported.
Thus, the effect of the homeopathic clinical process needs to be studied separately from the examination of any specific (non-placebo) effects that might occur from homeopathic drugs. He opined that the former should be examined in pragmatic randomized trials that compare homeopathic with standard therapy and the latter should be examined using simple laboratory or clinical models that can be easily repeated by independent investigators. Jonas opines that the greatest weaknesses in homeopathic research are the variety of unreplicated studies and the small sample sizes. As in all medicine, success in a treatment at one site often does not always translate into success at other locations with different practitioners and patients. In addition, homeopathic studies often demonstrated an interaction of treatment setting and treatment indicating that non-specific effects in the environment more often contributed to the outcome than in conventional research. The absence of an appropriate framework from which to examine homeopathic remedies is one but not the sole challenge to quality research in this alternative practice.

Homeopathy is controversial because medicines in high potencies involve huge dilution factors (e.g. $10^{60}$ and $10^{400}$) which are many orders
of magnitude greater than Avogadro's number, so that theoretically there should be no measurable remnants of the starting materials. Repeatability of experiments is an important criterion of modern research and a major challenge for homeopathic basic research.

There have been many publications on the unscientificity and unethical nature of Homoeopathic treatment. Shaw 2010 in an editorial comes up against the funding of Homoeopathy by National Health Service in England. There are NHS homeopathic hospitals in Bristol, Liverpool, Glasgow and London, and the Medicines and Healthcare Products Regulatory Agency (MHRA) has judged homeopathic treatments worthy of licensing (British Homeopathic Association.) Many patients seem to believe that homeopathic treatment helped them, as sales of homeopathic remedies in the UK increased by 24% in the 5 years up to 2007 (Ernst, 2009). Even when there is a growing trend towards Homoeopathy, many experts argued that there was no evidence that homeopathy is effective.

The World Health Organization has said that homoeopathy should not be used to treat several serious diseases such as HIV, tuberculosis, and malaria after doctors drew attention to the continuing promotion of
such complementary therapies in many developing countries. WHO also said that it did not recommend homoeopathy for treating diarrhoea in infants or flu (Mastha, 2009).

Homoeopathic treatment is typically regarded as a complex health intervention, which cannot be attributed to the efficacy of homeopathic medicines alone. It is claimed that the special style of case-taking, a different approach on how to manage conventional therapies, and specific life-style recommendations must both be considered as intrinsic parts of a homeopathic treatment. Ludke, 2013 opines that in such a state randomised controlled trials on homeopathic medicines alone might be inappropriate or at least insufficient to research homeopathy as a whole. On this background large-scaled, uncontrolled cohort studies have been conducted which aim to assess health effects by global, patient-centered outcome measures. These studies consistently reported that quality of life improves and or the severity of health complaints decreases in the majority of patients after treatment by a homeopath [Witt, 2005, Spence 2005, Anelli, 2002].
Low back pain

Low back pain is one of the most common and incapacitating disorders in modern society. About 80-88% of people experience incapacitating low back pain during their adult lives. Though acute low back pain in most of the cases is a self-limiting transient problem, chronic low back pain and its associated disabilities represent a significant health problem. Back pain is the second leading cause of industrial absenteeism, behind only to the common cold. It is the second most common reason why patients visit primary care physicians and is the number one cause of disability in men aged 30 to 45.

Epidemiology

Low back pain is a disease with point prevalence rates between 12% and 35% and lifetime prevalence rates ranging from 49% to 80%. Low back pain is a haunting problem with 40% of general population being affected.

Clinical Features

Symptoms of low back pain usually begin in the late twenties with the highest incidence between the ages of 30 and 50 years and equal incidence in men and women. Advanced age is associated with an increased risk of chronic pain. Low back pain may have a
multifactorial aetiology and there may be several types of back pain which closely mimic each other compounding the problem of back pain mechanism. The region of low back pain is extremely complex, both anatomically and functionally. Diverse prognostic factors such as educational status, age gender, physical factors such as the level of pain intensity and disability perceived by the patient, psychological factors such as depression and anxiety pain specific concepts such as fear avoidance, catastrophising and illness perception, occupational factors such as employment status all play a role in the disease perpetuation. There are common psychological and social traits in people who have developed chronic disability due to LBP. Many subjects with chronic LBP have been reported to have a psychological profile that predisposes them to develop chronic pain. Additionally, people aged between 50 and 60 years are more likely to become disabled due to LBP. People who have unrealistic beliefs about their pain and the nature of their disease are also prone to develop chronic low back pain. Both men and women are found to have equal incidence of low back pain.
People who tend to develop chronic disability from low back pain are:

1. People whose occupation involves heavy manual work and sustained posture

2. People with a previous history of sickness absence

3. People who seek multiple investigations and treatment

4. People with low educational achievement or low status occupation

5. People who have pending compensation issues

6. People with fear-avoidance beliefs—i.e. that a fear of activity may be more disabling than the original injury

7. People who exhibit ‘illness behaviour’, which may include attention seeking, grimacing, catastrophising about their problems or LBP, inappropriate coping strategies, excessive use of splints, braces, walking aids, and passive rather than active treatment modalities.

8. A patient’s general physical fitness may be a poor predictor of chronic incapacity

Disease-related factors predictive of chronic pain include presence of multiple functional symptoms, evidence of nonorganic disease, pain in
the legs, significant disability at onset, a protracted initial episode, multiple recurrences and a history of low back pain or in hospital treatment. Occupational factors have a very substantial impact: workers in blue-collar jobs, those involved in heavy labour or in jobs that require efforts beyond their physical capabilities and those who have a low level of job satisfaction or poor working conditions, who are new at their job, or who are not well rated by their superiors are more likely to develop chronic pain. A history of compensation for a spinal condition, receipt of work-related sickness payments, or litigation about compensation is also associated with an increased risk of chronic pain. Social and economic factors predictive of a chronic course are a low level of schooling, language problems, a low income and an unfavourable family status. The impact of psychological factors is controversial. Depression may decide development of chronicity. Overall, progression to a chronic pattern of pain is more closely dependent on demographic, psychosocial and occupational factors than on the medical characteristics of the spinal condition itself.

CLBP is a condition where biological, psychological and social factors interact in causing and maintaining the complaints (Dersh, et al, 2001.,
Waddell, 2004). High degree of co-morbidity is seen with reports of additional somatic and psychological symptoms and complaints along with CLBP.

**Low back pain and its impact on the society**

Low back pain (LBP) has become increasingly problematic over the past century, receiving growing amount of attention and concern due to the burden placed on health system and social care system. CLBP is a highly prevalent, poorly understood, and treatment resistant disorder estimated to affect over 10 million individuals at a health care cost. Low back pain is said to be responsible for huge economic losses all over the world. In Britain, between 1986 and 1992 back pain disability rose by 104%, whereas disability for other reasons rose by 60%. As a result, production days are lost due to incapacity to work related to back pain. Similar results are obtained from most of the nations of the world. Back pain results in restrictions of social and other activities and has substantial impact on the life style of those affected.

LBP often causes severe emotional, physical, economic and social stress and has a negative impact on the patients and their families. Therefore, LBP is associated with high costs, psychosocial and
disabling effects. About 31 million Americans experience back pain which is the primary cause of limited activity for young adults. Although use of health care services is affected by numerous factors, pain alone plays a significant role in service utilization, especially in the elderly.

The Global Burden of Disease study 2010 reported LBP prevalence of 632 million persons making it the leading cause of Years Lived with Disability. LBP is often managed with costly or invasive interventions of questionable benefits and safety, including diagnostic imaging, opioid analgesics, epidural corticosteroid injections and surgery. Low back pain is the second important reason to see a medical practitioner all over the world. In US LBP is the most common reason to use complementary and alternative medicine.

Because of its high prevalence, back pain is a leading reason for physician visits, hospitalisations and other health and social care service utilization. Additionally, it creates disability and work loss, which in recent years have increased more rapidly than any other common form of incapacity. This epidemiological and economic impact of back pain on society is expected to increase further, due to a
combination of changing attitudes and expectations, changing methods of medical management and changing social provision. However, the direct cost of back pain is insignificant compared to the cost of informal care and the production losses related to it.

The acute low back pain conditions are self limiting and have an excellent natural history. 80-90% of back pain attacks become asymptomatic in 6 weeks, 98% in 24 weeks and 99% in 52 weeks leading to the assumption that most cases of low back pain are benign in nature. However the small percentage of people who do become disabled with chronic back pain amount to 75-90% of the cost associated with low back pain. This group has been the focus of much research.

**Impact of pain on an individual**

LBP affects more than 80% of the population. Patients with LBP are seen by clinician of all disciplines, not only by joint orthopedists or neurosurgeon. LBP is said as a problem of structural degenerative cascades, psychological cascades and socio economic cascades. The cascade is a succession or series of processes, operations or units, the outputs of each serving as the input for the next.
The structural degenerative cascade is the series of anatomical and pathological changes that occur over time. This process is manifested clinically by symptoms, signs or abnormal radiological studies. The process begins with micro or macro trauma often augmented by biochemical changes, in the disc or facet joints and results in structural alteration of the vertebral motion segment. As the process continues, structural degeneration may eventually manifest as disk degeneration or herniation, spinal instability, malalignment, facet arthrosis and stenosis, any or all of which may be painful.

Psychological cascade may have been present before the spinal disorders or may have arisen as a result of the spinal disorders. The pre-morbid psychological problems are of two categories — psychological pre-dispositions towards chronic pain and psychological disorder that are the direct cause of the pain. The somatisation disorders, conversion disorders, hypochondriasis, and somatoform pain disorders are psychological illnesses that present with pain as the predominant symptoms. The psychological problems and sufferings that occur as a direct result of the pain and injury become more prominent when pain becomes longer.
Pain may take a heavy toll on people’s lives. It can lead to depression, which in turn makes pain even worse. Some patients become hopeless about ever feeling well again.

Despite the high prevalence of back pain in general population, average person pay little attention to this part of the body until the pain develops. Those who do not recover from the LBP after its happening, find the entire life style coming to a grinding halt. While medical care is focused on discovering the peripheral symptoms and its treatment, it often true that the greatest contribution to chronic LBP and disability are psychological factors (Frymoyer & Cats-Beril, 1987., Frymoyer, 1985). The scope of stressors assaulting the psychological equilibrium of the spine injured patient is truly vast. Spine pain can so inhibit function that it causes dramatic changes in self image and self esteem. These changes increase exponentially with the chronicity of illness, incomplete physical diagnosis, and inadequate treatments. Other compounding variables include patient’s fear of potential future damages, conflicted medical information, adverse relationship with care givers, incompatible goals with the medico legal system, family
disruption, financial devastation and occupational uncertainty, lose of social context prior psychological problems and chemical dependency.

Most studies of inter relationships between LBP and psychological factors emphasise behavioural aspects, compensation payments, secondary gain or depression. These approaches describe the psychological and behavioural effects of unremitting LBP.

In the developmental milestones of a human being, the transition from recumbent to upright position occurs between 10 and 14 months of life. This period is marked by a surge of independence and autonomy. The world is much more within the toddlers grasp than before. Unremitting back pain, threatens to recreate a state of dependence that individuals have experienced since the time before they first stood. In addition the preupright infancy period was one without language. Correspondingly the spine pain threatens the patient with a dependence experience that may seem beyond words and beyond verbal communication. Even the words about the spine that are available in everyday metaphoric language are disparaging. When someone is accused of being spineless, it is to suggest a cowardly avoidance of responsibility. People are to have more “back bone” when being admonished to
become more decisive and independent. We “break our bone” when we work diligently under burdensome circumstances, especially when it involves a martyred sense of duty. We “bend over backward” when inordinate and flexible generosity is required by another’s insistent demands. Thus, when someone is disabled with LBP, an ominous threat of potentially humiliating, indescribable dependency that does not allow him/ her to stand up for himself (have back bone) work hard (break his / her back) or have flexibility in the face of every day demands (bend over backward). It is apparent from every day languages that the back allows human being for more than just upright posture.

Psychological series of events for a person who gets affected by chronic LBP have been extensively studied. The first feeling is one of threat. Usual patterns of coping are not sufficient to bring life into its familiar order. The patient is in a state of profound helplessness, and consequential loss of autonomy. The feelings of victimization, humiliation and terrifying vulnerability that accompany the threat is aggravated by without an accurate diagnosis. The suffering feels unauthentic without a name. Some patients fear that the pain is imaginary and could mean that they are going insane. The patient
begins to feel increasingly apprehensive and anxious. Simple activities which were automatic previously become a source of increased pain leading the patient to be vigilant about the pain. Unless the medical treatment is effective, the anxiety increases along with sleep disturbances. The lack of restorative sleep result in the worn out, frayed and fatigued state of the patient.

Patients attempt to defend themselves against the feelings of anxiety, fear and terror of loss with a myriad of methods. Repeated attempts are done by the individual to extract themselves from this state with all the coping skills they know. Often these attempts will only lead to further frustration and increased pain. Most commonly there is a denial of the seriousness of the problem (e.g. premature return to work or to vigorous recreational activities), narcotics or sedative use and / or insistence on surgery as a magical solution to avoid the frightening and mysterious unknown of the continued threat. This phase is riddled with feelings of rage, persecution, self doubt, helplessness, social isolation, and embarrassment.

The patient becomes more exhausted and isolated with disturbed sleep, weight loss or gain and loss of sexual interest. They become socially
isolated. Attempts to maintain previous activities become disrupted. The pain and sufferings are so personal that no one can really understand. The family members will have only superficial interaction with the patient to avoid the dreary world that surrounds the patient with chronic pain. In other cases the family too will become unwitting participants in an entrenched chronic pain syndrome.

The pain goes on into symptoms of depression. For patients with a personal or family history of depression, pain related depression often emerges more quickly than in those who do not have such a history. The loss of mental, emotional, and physical energy and stamina leads to a deepening state of hopelessness, powerlessness, apathy, indifference and despair of recovery. For the caregiver this phase can be the most taxing because of the uncertainty as to whether the patient will recover.

The patient when not fully managed will go into a state of pervasive passivity and dependency. The patient has surrendered to the pull of forces beyond his / her control and allowed his / her previous life to collapse without hope of any return
Socio economic cascades. - Patients with chronic pain usually become entangled in a web of doctors with deferring opinions, employers and insurance workers. This is associated with others social problems like financial hard ship, strained relationship with friends and co-workers. Patients may spend long hours at home alone and become withdrawn and lonely. Negative social wises have an impact on the psychological state of the patient and perpetuate the downhill spiral.

The researchers show that LBP has a major influence on the social structure. Estimate of the cost is as high as 50 billion dollars annually in US alone. The medical treatment given may be inefficient, redundant and in many cases unnecessary. Even so, medical aspect of the treatment is only one third of the cost. The other two third consist of socio economic factors that include disability payment, legal fees, lack of productivity, administrative cost and other hidden costs to the society. Although the incidence of the LBP has remained relatively static, the increase in disability due to LPB has increased 14 times the rate of population growth.
Anatomy of low back

Chronic back pain should be considered not as a disease but as a symptom for which its position is characteristic (Waddell, 1998). Back pain is defined as pain that is localized beneath the shoulder blades down to the gluteal folds. The most common form of back pain is low back pain where pain is localized around lumbar vertebrae, sacrum and coccyx, sometimes pain radiates into the legs, or less often into the waist or hips.

The human vertebral column is a remarkable structure consisting of many parts, which should be considered as an integrated unit. It combines strength and flexibility by alternately interposing rigid bony vertebrae with deformable cartilaginous discs (intervertebral discs). There are five lumbar vertebrae each of which comprises two principle parts: the posterior vertebra larch with its processes and the anterior vertebral body, which is composed of spongy bone covered by a thin layer of compact bone.

The basic anatomical and functional unit of the vertebral column is the articular triad, consisting of the fibro cartilaginous intervertebral joints and the two zygapophyseal joints. The intervertebral joints are
primarily responsible for flexibility allowing a wide range of movements. It also helps in load transmission and shock absorption because of the mechanical properties of the disc.

The intervertebral discs are avascular, load bearing structures with a central gel like nucleus enclosed by the lamellae of the annulus fibrosus. The intervertebral disc consists of two distinct subunits: an outer lamellar annulus fibrosus (blending with the ring apophyses, via Sharpey’s fibres and hyaline cartilaginous end plate) which envelopes a semi fluid nucleus pulposus. This amphiarthrosis with its associated ligaments forms the strongest part of the mobile segment.

The annulus fibrosus is not homogenous, while the nucleus pulposus is homogenous and has a relatively high proportion of mucopolysaccharides causing it to behave as an incompressive fluid which is confined to a constant volume in a hydrostatic state of stress. The fibres of nucleus fibrosus exhibit a biaxial orientation, which allows a variation in distance between vertebrae to accommodate the various modes of movement.
The lumbar zygapophyseal joints lie posterolateral to the lumbar spinal canal and posterior to the intervertebral foramina (canals). These joints are approximately sagitally oriented in the upper lumbar spine, rotating toward the coronal plane at the lumbosacral junction. Zygopophyseal joints are synovial joints formed by the convex laterally facing inferior articular process with the medially facing concave superior articular process of the adjacent lower vertebrae. Zygopophyseal joints are biplanar with the major posterior parts of the joint approximated. The zygopophyseal joints guides and restrains movement between vertebrae and protects the disc from shear forces, excessive flexion and axial rotation. All sliding joint surfaces are lined by hyaline articular cartilage which has a spinal shock absorbing property.

The multifidus muscle covers the posterior zygopophyseal joint capsule. The multifidus muscle has a number of fleshy tendinous fasciculae which fills the groove beside the spines of the vertebrae from the sacrum to the axis and is best developed in the lumbosacral region.
The ligamentum flavum are a series of inter laminar ligament located within the spinal canal covering most of the dorsal bony wall of the spinal canal. These ligaments act as check ligaments in preventing hyper flexion, their elasticity serving to re-establish and maintain normal position after flexion and rest. This gives a smooth covering to the posterior part of spinal canal.

The spinal canal encloses the spinal dural tube and its contents bathed in cerebrospinal fluid. The intervertebral foramina contain the osseous nerve root canals and their medial and lateral opening which allows the passage of nerve roots.

The blood supply of the lumbar area is by four pairs of lumbar arteries arising from the posterior wall of abdominal aorta. These arteries divide into the posterior elements, a branch to the spinal canal and a branch to the abdominal wall.

The movement of lumbar spine can occur in sagittal (flexion and extension), coronal (side bent) and transverse (rotation) planes. Lumbar stabilisation along with structural integrity and stabilisation of spine relies on intraabdominal pressure and muscular support system.
Pain – its physiological, anatomic and pathological basis with reference to low back pain

Pain, as defined by the International Association for the Study of Pain, is an "unpleasant sensory and emotional experience associated with actual or potential tissue damage, or described in terms of such damage." Pain has a neurophysiologic sensory component, which signals that tissue insult is occurring, and a perceptual psychological component, which affects the subjective experience of pain.

Pain is an extremely salient phenomenon in human life and is typically the symptom that brings a person to medical care (Safer, et al1979). People will often tolerate the most annoying and sometimes the most apparently serious symptom as long as they have no pain. For many pain is what suggests danger and want the pain to be stopped (Zborowski,1952). The lack of pain may diminish a person’s incentive to seek medical treatment.

Pain is the chief symptom of spine complaints. Pain is a complex experience that involves peripheral nociception, neuropathic problems and the psychological status of the individual. Pain occurs when tissue is damaged. Pain has important protective functions. While all pains
are perceived centrally in the cerebral cortex, it is a sensation which normally results from the noxious stimulation of peripheral nociceptive nerve endings by chemical or physical agents. The free nerve endings are the most common of all the general sensory end organs.

The zygapophyseal joints, the outer annulus, and posterior longitudinal ligaments are pain sensitive structures which are innervated from the dorsal ramus. The dorsal root ganglion in the middle zone of intervertebral foramina, which is a signal processing centre for all afferent inputs play a critical role in genesis and modulation of spine pain syndrome. There are also sympathetic innervations to the area. The outer annulus, facet joint capsules, posterior longitudinal ligaments and cartilaginous end plates have afferent nociceptive and proprioceptive nerve endings. Aβ, A∞ and C fibres are the major primary afferent nerve fibres. Aβ fibres are larger myelinated fibres which are sensitive to nonnociceptive mechanical stimuli and thermal stimuli. A∞ fibres which are responsible for the first pain are smaller, thinly myelinated and are stimulated by nociceptive mechanical forces, heat, and cold and are blocked by compression. C fibres are unmyelinated and conduct slowly and respond to mechanical and
thermal stimuli. They produce the second pain which is often dull or burning and is blocked by local anaesthesia. The stimulated C fibres release chemical such as substance P, neurokinin A, and B, and other peptides. From the stimulated sympathetic fibres chemical substances such as adrenaline, adenosine and acetylcholine are released.

Tissue injury becomes the site of nociception. The tissue injury acts directly on the nerve ending either chemically thermally or mechanically. There are multiple chemicals involved in transduction, transmission and modulation. These chemicals are liberated from peripheral nerves in response to damages. Substance P, calcitonin gene related protein, potassium, bradykinin, serotonin, histamines, prostaglandins and leukotreins are some of the sensitive nociceptors. There is afferent conduction (transmission) of impulses via peripheral nerve fibres to the dorsal horn of spinal cord and where the transmission is modulated (gate control system Melzack and Wall 1965) and send to brain where further modulation may occur. The Melzack & Wall concept is used to explain and offer numerous methods of preventing pain sensation or at least dampening pain sensations that are transmitted from nociceptive tissues. The concept
also postulates that impulses descending from the long tracks originating from the reticular formation and the raphe nuclei. These chemicals acting on the transmitter are serotonin, nor adrenaline, dopamine and peptide.

As there is extensive divergence and convergence of the primary afferents in the lumbar spinal cord, stimulation of afferents from normal tissues too may activate the same spinal neurons that are activated by nociceptive input from injured tissues, falsely implicating normal tissues as the source of pain. According to the Gate concept, stimulation of more rapidly transmitting fibres may alter the impulse pool and decrease the pain.

The cells of the dorsal horn transform from normal to a pathological state of allodynia in a number of prolonged painful conditions, manifested by the increased excitability and pain transmission not only from nociceptive input but also due to stimulation from normal low threshold afferents, which would not produce pain in normal conditions.

Brain is the final destination of efferent transmission. There are both pain inhibitory system and pain facilitating system in the brain.
The usual direct relationship between pathology, nociception and pain is often distorted or absent in individuals suffering from persistent pain. Pain may be determined to a greater extent by central neuronal events than by ongoing pathology or nociception in peripheral tissues. These central neuronal events are often thought to be psychologically or psycho social determined.

The diffuseness of pain may be due to the consequence of extensive divergence and convergence of lumbar primary afferents within the spinal cord. The extensive rostrocaudal divergence or convergence of afferent activity implies that afferent activity impinging on individual neurons would enter the cord via many spinal nerves. As a result of convergence within the spinal cord, stimulation of afferent from normal tissues or nerves may strongly activate the same spinal neurons that are activated by nociceptive input from injured tissues, falsely implicating normal tissues or nerves as the source of pathology and pain.

Patterns of pain that do not correspond to well known distribution of peripheral nerves may occur as a result of divergence or convergence mechanism within the spinal cord particularly after normal patterns of neuronal interaction have been altered by the sensitizing effects of
prior nociception. Consequently considerable caution is warranted before attributing unusual pain distribution solely to psychosocial or psychogenic mechanism.

A psychogenic origin of persistent LBP syndrome is supported on the basis of the following characteristics

1. Occurrence and persistence of LBP in the absence of identifiable adequate pathology

2. To pain due to normal non noxious stimuli.

3. The resistance of pain to pharmacological anti nociceptive intervention

4. Diffuseness or distribution of pain pattern not restricted to the distribution of the potentially involved peripheral nerve.

5. Its relief by placebo.

There are numerous concepts of pain and numerous classifications of the pain evolution in medical literature. The symptoms, the cause and therefore the control of pain still remain in the domain of medical sciences. There are many ramifications into jurisprudence, legal philosophical and even religious factors and pain belongs to those
entire realms, but the current thinking still isolates the concept into neuro-physiologic and psychological domain.

How one thinks of pain depends on the evaluator’s learning and experience. In the medical realm, the neurologist considers pain a neuro-physiologic abnormality. Neuro-surgeon also considers the basis of pain being a neuro-physiologic condition that is amenable to surgery. Psychiatrist considers pain to be an emotional response to internal emotional conflict that responds to analysis and support and more recently to psychiatric medication. The behavioural scientist considers chronic pain also as an emotional response with psychosocial maladjustments. The pharmacologist considers chronic pain to be a biochemical aberration that can be therapeutically modified by medication. The orthopaedist evaluates the LBP as a deviation of normal anatomic structure, an anatomical structural change caused by external forces that can be visualized by X-ray, CT, diskogram, or other procedures. The ‘cause’ once recognized can be modified by physical therapeutic modalities or can be ameliorated by or removed by surgery. The physiatrist views to pain to be the result of improperly
conditioned and used tissues of the low back that can be improved, if not alleviated by physical means such as heat, ice, exercise.

Traditionally, LBP has been attributed to impaired neuromuscular skeletal function and treatment has been to correct or modify the abnormalities. When appropriate treatment fails and the patients continues having pain lasting approximately more than six months, the condition is considered as chronic pain.

Brena (1978) has enumerated five sequelae seen in chronic pain termed the Five – D – syndrome, which are sequelae of LBP that progress regardless of the considered or contemplated treatment. These are

1. Drugs – abuse or misuse

2. Dysfunction - a decrease in function, performance and the achievements of good quality of life.

3. Disuse – loss of tissue flexibility, strength, endurance and ultimately tissue degeneration.

4. Depression – significance loss, real or fantasized

5. Disability - inability to perform activities of daily living or the pursuit of gainful employment.
These are sequelae and do not clarify the ‘cause’ of why LBP becomes chronic and nor do these sequelae indicate the remedy.

**Diagnostic decision making**

It is extremely valuable to consider back disorders in terms of the structural degenerative cascade because a meaningful clinical correlation exists between the structural changes of the spine and clinical signs and symptoms.

Some Possible Causes of low Back Pain, with or without leg Pain:

1. Nerve root conditions
2. Adhesions between Dural sleeves and the joint capsule with nerve root fibrosis
3. Intervertebral disc degeneration and fragmentation or nucleus pulposus extrusion
4. Lumbosacral arachnoiditis
5. Zygapophyseal joint conditions
6. Joint derangement due to ligamentous and capsular instability
7. Joint capsule tension, encroachment of the intervertebral foramen lumen; impingement of the articular process tip against the pedicle above and the lamina below

8. Joint degenerative changes, e. g. meniscus incarceration

9. Joint effusion with capsular distension which may exert pressure on a nerve root pain by direct diffusion.

10. Joint capsule adhesions

11. Intra articular synovial fold inclusions tractioning against the pain-sensitive joint capsule

2. Miscellaneous conditions:

Spinal stenosis

- Intervertebral foramen venous stasis
- Myofascial genesis of pain (trigger areas)
- Hypertension in the bone marrow of the vertebral body or in the juxtachondral space of osteoarthritic intervertebral joint
- Psychological Illness with LBP
- Medical Illness causing LBP
- Deconditioning Syndrome
- Non specific LBP / Strains
Differential diagnosis of LBP includes

- Annulus Tear
- Painful degenerative disc
- Herniated disc
- Internal disc disruption
- Facet syndrome
- Spinal Stenosis – central and inter vertebral
- Spondylolisthesis
- Instability
- Spondyloarthropathy
- Psychological Illness with LBP
- Medical Illness causing LBP
- Deconditioning Syndrome
- Non specific LBP / Strains

Acute annular tear:

Acute annular tear is the most common cause of acute LBP, also called muscle strain or sprain or myofacial LBP. A definite diagnosis is difficult or not necessary as it is self limiting. The diagnosis may be useful for secondary prevention due to the high incidence and prevalence of LBP. The condition occurs from injury to annulus
resulting in tear by flexion with or without torsion often under loading condition. LBP due to annulus tear often radiates to one or both gluteal region. Pain is severe in the beginning, easing within few days. Pain is aggravated from flexion or prolonged sitting or standing and also by walking especially up hill.

Physical examination reveals muscle spasm which is palpable or visible and restricted range of movement. Press ups may ease the LBP and centralize leg pain. SLR may be limited due to hamstring stiffness but there will be no true sciatica.

General treatment like non steroidal antiinflammatory agents, icepacks, press ups especially for the first 3-4 days followed by physical therapy is found beneficial.

**Painful degenerative disc**

Painful degenerative disc is a condition with unknown prevalence. The incidence of painful degenerative disc increases with age. The annulus may not be fully resolving after injuries. Usual mechanism of the disease is thought to be chronic recurrent or cumulative trauma. Each micro or macro trauma may or may not have produced symptoms. The disc becomes desiccated and the intervertebral disc becomes narrower.
The nociceptors in the outer annulus or DRG are stimulated and produce pain. The pain is aggravated by flexion or prolonged sitting or standing and by walking especially uphill.

Physical examination reveals palpable muscle and restricted range of movements. If there is nerve root compression, motor loss, dermatomal sensory loss and decreased reflexes may be obtained. Straight leg raising test (SLR) is found to be positive.

General treatment is usually with non steroidal anti-inflammatory agents and rest for two days. Surgery can be indicated like, arthroscopic micro discectomy, automated percutaneous discectomy, chymopapain chemo nucleolysis.

**Internal disc disruption**

Most spine specialist suggest IDD as a painful disc in the presence of normal MRI, CT, myelogram, plain X-ray.

These patients complain of chronic LBP characterized by acute exacerbations and may report non specific referred leg pain which increase with sitting, aggravated or ameliorated from walking. They are often labelled as having somatoform pain disorder. The condition is more seen in females and usually occurs due to acute injury of a
lumbar flexion type, often with lifting or a fall with axial loading of spine or after a motor vehicle accident.

Physical examination indicates some limitations in forward bending. Posture may be normal or there will be occasional loss of lumbar lordosis. Palpation of lumbar spine through abdomen may produce concordant LBP. SLR or prone knee bend may cause LBP or leg pain. Diagnosis is by provocative discography which produces severe concordant pain with low volume of injections.

Treatment is by anterior inter body fusion with or without posterior inter body fusion. It is important to consider whether psychological factors are the driving force for the pain and disability.

**The facet syndrome**

Facet joint pain is seen in 15 to 20 percent of patients with non specific LBP. Clinically LBP is presented as pain radiating to one or both gluteal region. Proximal leg pain is often present. Pain is aggravated by prolonged standing, lying and change of position like changing from sitting to standing position.

Physical examination reveals extension while standing or prone to be painful, Neurological examinations are found to be normal.
Treatment consists of teaching to unload the facet joint by exercises.

**Spinal stenosis**

Spinal stenosis can affect inter vertebral canal or central canal. In most of the cases spinal stenosis has a history of long standing mild to moderate LBP that may be constant or intermittent. This can progress into pain in unilateral or bilateral leg produced by walking. The pain is ameliorated by rest. LBP may or may not be still present along with the leg pain.

Physical examination indicates loss of lumbar lordosis and decrease in extension. SLR is limited by hamstring stiffness. Prone knee bent positive by L3 involvement.

X-ray is diagnostic, multi planner CT or high quality MRI also helps in diagnosis.

**Instability/ spondylolisthesis**

LBP may arise from the disc at the level of the slip (shearing effect), the level above or below, secondary spinal stenosis, and facet joint or possibly on a spondylolytic defect itself. Clinically in young persons, pain originates from bone defect itself. In adults source of pain is spinal stenosis or a degenerate disc.

Diagnosis is done by X-ray and CT.
Non specific LBP- Sprain or Strain

Non specific LBP- sprain or strain presents with muscle tenderness and restricted range of movements. Neurological findings are normal. These are said to be acute condition. No data to show that a syndrome or chronic strain or sprain arise from the strain.

Psychological illness with LBP

Psychological process may precede the spinal problems or succeed the spine pain. (Polatin 1993). Some degree of psychological issues may exist in every patient with spine pain, but the degree to which these issues affect pain and disability vary greatly. In the chronic settings, psychological problems may be the major obstacle to recovery. Severely disabling LBP is a psychological problem that usually has some structural component, rather than a structural problem that happens to have a psychological component.

Although it is clear that most patients who complain of pain of spinal origin have some nociceptive input, it is equally clear that there is a group of patients whose pain and level of disability appear far out of proportion to other patients with similar structural lesion. It is in this latter group that psychological factors may be dominant. Psychological
illness may predominate in cases of spinal problems. Pain may be a component of the psychological illness or it may exacerbate it. The DSM-III-R describes a group of illness under the category of somatoform pain disorder. These include somatisation disorder, conversion disorder, somatoform pain disorder, and hypochondriasis. In each of these, the symptoms suggest some physical disorders but the evaluation fail to disclose a physical problem of sufficient magnitude to account for the symptoms. There must be evidence of a psychological illness, not merely a diagnosis of psychological illness by exclusion. Some have a psychological predisposition towards chronic pain prone (Engel 1959, Shoffermann 1993). Shoffermann opines that often these patients have psychological trauma during childhood that predisposes them to develop chronic pain after injury. Many patients with chronic pain suffer from depression. In some instances depression is the cause of the pain or at least drives the pain so that it is greatly exacerbated. However, more often the unremitting pain causes a secondary or reactive depression.

Another DSM III R category patient pertinent to pain is called psychological factors affecting physical conditions, where psychologically
meaningful stimuli initiate or exacerbate the physical disorders. There must be structural disorders for psychological diagnosis to be made.

Post-traumatic stress disorder too can result in LBP. The patient suffering from stress disorder has recurrent dreams, intrusive thoughts, and nightmare, in addition to chronic pain syndrome. Some patients suffer from an adjustment disorder with either depression or anxious mood. This form of psychological disorder occurs within three months of an identifiable stress that is followed by symptoms of depression or anxiety out of proportion to that which is expected from the stress. Again this psychological disorder may augment pain and disability.

Another form of psychologically driven pain disorder is secondary pain gain like avoiding unpleasant aspects of life such as a hated job, an unpleasant boss, undesired travel. The pain may also serve to provide things which are missing in life. Waddell et. al (1980) have described five signs, the presence of three or more of which may suggest psychological elaboration like ratchet like movement during range of motions testing or during manual testing, SLR of 10 to 15°, frequent grimaces or crying during examination and bizarre gait pattern. The
prevalence of schizophrenia, delusional disorder or bipolar disorder
does not appear to increase pain in patients with psychological LBP.

**Significance of medically unexplained symptoms (MUS)**

LBP is extremely common condition for seeking medical aid. Patients
present with symptoms and doctors seek diagnosis. In one third of
cases no diagnosis becomes clear. These conditions are generally
known as medically unexplained symptoms. MUS can be described as
due to somatisation or as functional somatic syndromes diagnosed as
irritable bowel syndrome, fibromyalgia or chronic fatigue syndrome.
MUS are common, important, remarkably neglected, medical
problems. These account for a substantial proportion of the work of
most doctors and are the reason for approximately a third of new
medical out patients’ consultations. Although sometimes dismissed as
merely ‘worried well’, these patients often suffer more disability and
distress than patients whose symptoms are explained by disease. They
are also expensive to the health care systems because they attend
multiple specialist services where they receive extensive but
unproductive investigation and treatment. Doctors working in these
services, not surprisingly, find them ‘difficult to help’. The size and
importance of this clinical problem makes it all the more curious so that few doctors take any special interest in it.

The best term for scientific use which explains such symptoms is medically unexplained or better unexplained by identifiable disease. Most text books and computer databases use ‘somatoform’ and somatization.

Different medical specialties have at least one of the unexplained symptoms. For example: Rheumatologist label prominent muscle pain and tenderness as fibromyalgia, abdominal pain with altered bowel habits as irritable bowel syndrome by gastrointestinal specialist. Infectious disease specialist referred to chronic fatigue and myalgia as post viral or chronic fatigue syndrome. It has been argued that these ‘functional syndrome’ are not really separate conditions but nearly a reflection of the tendency of specialist to focus only on those symptoms that relate to their (organ based) specialty. Literature study shows substantial overlap between these syndromes in their constituent symptoms, propose aetiological factors and response to treatments.

Throughout history cases have presented with somatic symptoms that their doctors could not explain in terms of objectively identifiable
disease. The precision in identifying disease has improved but the problem has not been solved. Many patients present with the medically unexplainable symptoms becoming a challenge to doctors. The explanations that have been proposed for the MUS have changed over time. The early ideas located their cause as a disturbance in a body organ. Attention then moved to the peripheral nervous system, later the central nervous system and more recently the mind. These changing etiological theory have been reflected in the terms used to describe the symptoms, the organ theory gave rise to ‘hysterical’ (referring to uterus), and hypochondriacal (below the ribs), the nervous system theory to nervous, (malfunctioning nerves) and neurasthenic (weak nerve) and the mental theory to psychological, psychogenic somatization, and somatoform (mental problems made somatic).

The changing theories have produced changing approaches to management too. Early treatments focused on the organs which were believed to be the cause of the symptoms. Consequently removal of the organs was carried out. When the proposed explanation shifted to peripheral nervous system the preferred treatment became nerve tonic, electrical stimulation and other methods that were intended to
regenerate nervous energy. As interest shifted to central nervous systems, hypnosis became a briefed treatment. It was only on the 20th century, following the work of Freud and the rising popularity of psycho analysis, that MUS came to be seen as a mental problem requiring psychiatric rather than medical treatment. This view persisted for most of the 20th century.

Most doctors still regard MUS as purely mental in origin, but it has become increasingly obvious that such an approach is both scientifically inadequate and practically unhelpful. Developments in neuroscience have supplemented previous studies with demonstration of a variety of associated physiological changes. In practice, patients regard purely mental explanation as dismissive and stigmatizing and physician finds it frustrating as it does not help them manage the patients. A better approach is required, and one that sees such symptoms as not only psychological but also having a basis in the change of nervous systems functioning offers a better acceptable explanation to the patients. Although offering new opportunities, this idea is in fact a rediscovery of the concept of functional disorder that was in common usage in the 1890s.
Despite advances in imaging, in most patients, it is impossible to determine whether identifiable structural or mechanical abnormalities are responsible for the symptoms. There is often a mismatch between objective findings and symptoms. Moreover, even when anatomic abnormalities are detected, the significance is unclear, since bulging disks or annular tears are found in high percentages of asymptomatic individuals. Increasing age, female sex, lower levels of formal education, depression, stress, job dissatisfaction, and disability/compensation issues may play some role in expression of symptoms and in chronicity. However, all of the known anatomic, demographic, and psychosocial factors that might cause CLBP do not explain the symptoms in a significant number of subjects. These individuals are sometimes referred to as having “idiopathic” or “nonspecific” CLBP. Although chronic pain greatly diminishes quality of life and increases anxiety and depression, it is assumed that the cerebral cortex passively reflects spinal changes and reverts to its normal state after cessation of chronic pain.

**Aetiology and pathophysiology**

The precise aetiology of many MUS is unknown, but there is evidence of an etiological role for biological, psychological, interpersonal
factors for any given case. Rather than seeking a single cause for patient’s symptoms, it is better to consider the relative contribution of these factors. Perpetuating factors are especially important to identify as they offer targets for treatment. Although physiological mechanism of symptom production is not fully understood, many putative mechanisms have been identified. These interact with psychological and interpersonal factors to perpetuate the illness. The various putative mechanisms are chest wall pain and paraesthesia from over breathing in non cardiac chest pain, neuronal plasticity in localized chronic pain, changed overall central nervous system pain sensitivity in fibromyalgia and neuro endocrine changes in chronic fatigue.

Management of MUS results frequently in suboptimal, iatrogenic, psychological and physical harm from unhelpful explanations, unnecessary tests and ineffective medical and surgical treatment. Specific services for chronic pain are usually unavailable.

**Epidemiology**

Medically unexplained somatic syndromes are extremely common in the general population of all countries. However, only some of the people experiencing them will seek medical attention, usually because of concern
about the cause of becoming a severe discomfort or disability. MUS are
the principal reason for a quarter to half of all consultation in primary
care, but only a few are referred to a hospital clinic.

At a hospital speciality outpatient clinic a third of all new patients have
symptoms that remain inadequately explained by any disease
terminology, even after exhaustive assessment. Some are admitted to
hospital. In a hospital inpatient care unit these patients are costly to the
service and are at high risk of iatrogenic harm resulting from unnecessary
surgery.

The aetiology of MUS is not known much, so prevention too is difficult.
But except for genetic factors, interpersonal and economic factors of the
parenting, stigma of psychiatric illness and the nature of benefits and
litigation systems are relevant to reversible influences. For secondary
prevention, effective early management probably reduces the risk of
chronicity where as poor explanation, over investigation and
inappropriate medical treatment probably increases it. Tertiary prevention
can be achieved by effective management of the patient with chronic
established symptoms and by limiting iatrogenic harm.
Clinical features

Frequent attendances at medical service, numerous negative investigations, history of unsuccessful surgery, and presentation of multiple symptoms at consultation are the important diagnostic presentations. Only way to confidently diagnose complaints as MUS is to complete the appropriate history and do the relevant examinations and investigations. Patients may have symptoms that are explained by disease and others that are unexplained by any disease diagnosis.

Many MUS are somatic symptoms of depression or anxiety. Most MUS reflect genuine suffering and disability and deliberate manufacturing of complains is uncommon in ordinary medical practice.

Differential diagnosis

The main DD for symptoms from MUS is from symptoms due to disease. Diagnostic difficulties are likely to occur with unusual presentation of common disease and with rare diseases. While missing diagnosis of serious disease is appropriate concern, the evidence indicates that once a patient has been completely assessed, the emergence of a ‘missed’ disease at later date is uncommon.
Somatoform disorder and low back pain

A somatoform disorder is a mental disorder of MUS variety which is characterized by symptoms that suggest physical illness or injury – symptoms that cannot be explained fully by a general medical condition or by the direct effect of a substance, and are not attributable to another mental disorder (e.g., panic disorder)APA2000. In people who have a somatoform disorder, medical test results are either normal or do not explain the person's symptoms, and history and physical examination do not indicate the presence of a medical condition that could cause them. Patients with this disorder often become worried about their health because doctors are unable to find a cause for their symptoms. This may cause severe distress. Preoccupation with the symptoms may portray a patient's exaggerated belief in the severity of their ill-health. (Oyama, 2011) Symptoms are sometimes similar to those of other illnesses and may last for several years. Usually, the symptoms begin appearing during adolescence, and patients are diagnosed before the age of 30 years (La France, 2009) Symptoms may occur across cultures and gender. Other common symptoms include anxiety and depression. In order for an individual to be diagnosed with
somatoform disorder, they must have recurring somatic complaints for several continuous years.

Chronic low back pain in most of the cases does not have physical signs and the pain and its associated disabilities represent a significant health problem. Chronic low back pain (CLBP) patients often are described as "somatizers", who report multiple somatic complaints beyond back pain itself. It is found that 25.8% of CLBP patients reported a lifetime history of 12 or more somatic symptoms. Major depression and alcohol dependence are significantly associated with increased severity of somatization (p < .05). Lower mood and increased impairment are related to greater number of somatic complaints. Symptoms of somatization are prevalent, but not universal, in CLBP and the pattern of these symptoms is reminiscent of the "spectrum of severity" reported in other medical populations. Recognizing this spectrum of somatization may lead to better patient-treatment matching and improved clinical outcomes. Chronic low back pain as a leading symptom of a somatoform pain disorder is a remnant diagnostic category for many physicians, general practitioners and orthopaedic surgeons. Patients with somatoform pain disorder (ICD-
10: F45.4) are often not diagnosed until after several years and multiple diagnostic procedures, in some cases after iatrogenic impairment. A more precise knowledge of the disorder can prevent developing chronicity of the pain (Egle, 2000).

Somatoform disorders are not the result of conscious malingering (fabricating or exaggerating symptoms for secondary motives) or factitious disorders (deliberately producing, feigning, or exaggerating symptoms) – sufferers perceive their plight as real. Various laboratory tests, physical examinations, and surgeries on these individuals show no evidence supporting the idea that these exaggerating symptoms are actually present (LaFrance, 2009). Mental disorders are treated separately from physiological or neurological disorders. Somatoform disorder is difficult to diagnose and treat. Those that do not pass the diagnostic criteria for a somatoform disorder but still present physical symptoms are usually referred to as having "somatic preoccupation" (Oyama, 2007).

Somatoform pain disorder is pain that is severe enough to disrupt a person's everyday life. Up to 50 percent of primary care patients present with physical symptoms that cannot be explained by a general
medical condition. Some of these patients meet criteria for somatoform disorders (Barsky, 1995, de Waal 2004). Pain disorder is fairly common. Although the pain is associated with psychological factors at its onset (e.g., unexplained chronic headache that began after a significant stressful life event), its onset, severity, exacerbation, or maintenance may also be associated with a general medical condition. Pain is the focus of the disorder, but psychological factors are believed to play the primary role in the perception of pain. Patients with pain disorder use the health care system frequently, make substantial use of medication, and have relational problems in marriage, work, or family. Pain may lead to inactivity and social isolation, and it is often associated with co-morbid depression, anxiety, or a substance-related disorder.

Although most of the cases do not meet the strict psychiatric diagnostic criteria for one of the somatoform disorders, they can be referred to as having “somatic preoccupation( Righter 1999), a sub threshold presentation of somatoform disorders that can also cause patients distress and require intervention. The unexplained symptoms of somatoform disorders often lead to general health anxiety; frequent or recurrent and excessive preoccupation with unexplained physical
symptoms; inaccurate or exaggerated beliefs about somatic symptoms; difficult encounters with the health care system; disproportionate disability; displays of strong, often negative emotions toward the physician or office staff; unrealistic expectations; and, occasionally, resistance to or noncompliance with diagnostic or treatment efforts. These behaviours may result in more frequent office visits, unnecessary laboratory or imaging tests, or costly and potentially dangerous invasive procedures. The main symptom of somatoform pain disorder is chronic pain that lasts for several months and limits a person's work, relationships, and other activities. Patients are often very worried or stressed about their pain.

Somatoform disorders contribute a significant economic burden to the costs of brain disorders. A thorough medical evaluation, including laboratory work and radiologic scans (MRI, CT, ultrasound, x-ray), is done to determine possible causes of the pain. Somatoform pain disorder is diagnosed when these tests do not reveal a clear source of the pain.

There are three required clinical criteria common to each of the somatoform disorders: The physical symptoms (1) cannot be fully
explained by a general medical condition, another mental disorder, or the effects of a substance; (2) are not the result of factitious disorder or malingering; and (3) cause significant impairment in social, occupational, or other functioning.

International and statistical classification of diseases and health related problems ICD-10 classifies somatoform disorders in the fifth chapter-Mental and Behavioural Disorders F00–F99 – Mental and behavioural disorder (F40–F48) Neurotic, stress-related and somatoform disorders (F45)

Somatoform disorder
(F45.0) somatisation disorder
Briquet disorder
Multiple psychosomatic disorder
(F45.1) Undifferentiated somatoform disorder
(F45.2) Hypochondriacal disorder
Body dismorphic disorder
Dismorphophobia (nondelusional)
Hypochondriacal neurosis
Hypochondriasis
Nosophobia
(F45.3) Somatoform autonomic dysfunction
Cardiac neurosis
Da Costa’s syndrome
Gastric neurosis
Neurocirculatory asthenia
(45.4) persistent somatoform disorder
Psychalgia
(F45.8) Other somatoform disorders
(F45.9) somatoform disorder, unspecified

**DSM-IV (TR) Diagnostic Criteria for pain Disorder**

1. Pain in one or more anatomical sites is a predominant focus of the clinical presentation and is of sufficient severity to warrant clinical attention.

2. The pain causes clinically significant distress or impairment in social, occupational, or other important areas of functioning.

3. Psychological factors are judged to have an important role in the onset, severity, exacerbation, or maintenance of the pain.

4. The symptom or deficit is not intentionally produced or feigned (as in factitious Disorder or Malingering).
5. The pain is not better accounted for by a Mood, Anxiety, or Psychotic Disorder and does not meet criteria for Dyspareunia. When the above criteria satisfy, chronic low back pain too may be considered a somatoform pain disorder.

DSM Code as follows:
307.80 Pain Disorder Associated With Psychological Factors: Psychological factors are judged to have the major role in the onset, severity, exacerbation, or maintenance of the pain. (If a general medical condition is present, it does not have a major role in the onset, severity, exacerbation, or maintenance of the pain.) This type of Pain Disorder is not diagnosed if criteria are also met for Somatisation Disorder.

Specify if:
Acute: duration of less than 6 months
Chronic: duration of 6 months or longer

307.89 Pain Disorder Associated with Both Psychological Factors and a General Medical Conditions: both psychological factors and a general medical condition are judged to have important role in the onset, severity, exacerbation, or maintenance of the pain. The
associated general medical conditions or anatomical site of the pain (see below) is coded on Axis III.

Specify if:

Acute: duration of less than 6 months

Chronic: duration of 6 months or longer

Note: The following is not considered to be a mental disorder and is included here to facilitate differential diagnosis.

Pain Disorder Associated with a general Medical Condition: a general medical condition has a major role in the onset, severity, exacerbation, or maintenance of the pain. (If psychological factors are present, they are not judged to have a major role in the onset, severity, exacerbation, or maintenance of the pain.) The diagnostic code for the pain is selected based on the associated general medical condition if one has been established or on the anatomical location of the pain if the underlying general medical condition is not yet clearly established – for example, low back (724.2) sciatic (724.3) pelvic (625.9), headache (784.0) facial (784.0), chest (786.50, joint (719.40), bone (733.90), abdominal (789.0), breast (611.71), renal (788.0), ear (388.70), eye (379.91), throat (784.1), tooth (525.9), an urinary (788.0).
In most somatoform disorder categories, a female preponderance exists. The female-to-male ratio has been estimated to be 10:1 for somatisation disorder, from 2:1 to 5:1 for conversion disorder, 2:1 for pain disorder, and 1:1 for hypochondrias. In the past, this disorder was thought to be related to emotional stress. The pain was often said to be "all in their head. " However, patients with somatoform pain disorder seem to experience painful sensations in a way that increases their pain level. Pain and worry create a cycle that is hard to break. In an article Lee 1986 claims that the diagnosis of somatoform disorders which disregards the medically unexplained symptoms as within the head is inappropriate in the Chinese culture. But he opines that far more important than diagnostic controversies, effective modes of intervention for the enormous number of people who suffer from somatoform (somatoaffective, more appropriately) syndromes across all cultural groups and societies must be promptly identified. As more psychiatric treatment is predictably incorporated into primary care and as medical service becomes increasingly insurance-driven, it is necessary to explore novel and cost-effective treatment methods. Because patients with somatoaffective syndromes do seem to benefit
from "alternative" therapies, there is an urgent need to evaluate, by combining biomedical and social science methodologies, the efficacy of such methods of treatment as homeopathy, Ayurveda, and traditional Chinese medicine [Zhou 1986, McNamara 1995]. These approaches to healing do not marginalize "unexplained" somatic symptoms; but, integrates somatic, social, and moral therapies, and manipulate placebo effects to patients' satisfaction. They may also be integrated with allopathic methods of treatment. In as much as somatic symptoms may also represent a sociomoral medium for protest against inequities and a strategy for social repositioning [Kleinman, 1995], an effective paradigm of care must ultimately restructure state policies and encompass socially meaningful forms of empowerment for the disenfranchised members of society.

Somatoform disorders do not appear to increase the risk of death independently. Some evidence exists that somatoform disorder is associated with increased risk for suicide attempts. Patients with somatoform disorders may be misdiagnosed as having a medical condition and therefore experience iatrogenic complications due to invasive diagnostic procedures or surgical operations.
Pain and costs of health care utilization

The phenomenon of pain has tremendous economic consequences. The cost associated with pain and sufferings are difficult to tally (Leigh et al 1997). Psychological factors affects perception of pain and the more pain an individual experience; the more likely he or she is to utilize health care services. When patient has a heightened sense of bodily awareness, he is more verbal about reporting their bodily sensations. They are prone to misunderstand those sensations and are more likely to seek medical care. Somatisation can further lead to increased health care utilization for several reasons, one of which is the experience of pain. Pain is one of the most frequently reported complains associated with somatization.

**Importance of pain as a tool in somatoform pain disorder and chronic low back pain researches**

Pain in the nervous systems is the idea of pain receptors and nerve cables dedicated to the transmission pain signals – a hard wired, line labelled system. For most of the acute pains and chronic nociceptive pains, this simple idea works well, but in chronic pain particularly associated with nervous system damage, this explanation does not work. The return of pain after an initially successful cordotomy is an
example. The ability of the nervous system to rewire known as plasticity is recognized in the return of the pain after destructive procedure. The nervous system can behave strangely if damaged or bombarded continuously by pain messages. Pain signals can be amplified or dampened by endogenous influences such as mood or endorphins or exogenous factor such as drugs given or the circumstances of injury.

Severe persistent pain can occur as the result of minimal nociceptive or even non nociceptive, afferent activity and that effective pharmacological intervention in this type of pain may depend on the development of new compounds that block central neuronal sensitization.

Disturbed sympathovagal balance resulting in altered sensitivity may be the reason for the pain sensitiveness in somatoform disorder. Pollatos (2011) opines that it may result in low parasympathetic and high sympathetic activity which in turn results in the decreased pain tolerance. Augmented central pain processing may be a reason for the decreased pain tolerance. Interactions of cognitive and perceptual process with behavioural, affective and biological changes may be seen in somatoform disorder. Though these symptoms cannot be completely
attributed to known physical conditions Sharpe (1992) claims that these symptoms do have physiological covariates like increased heart beat perception. Hypothalamic pituitary adrenal axis is also said to be involved (Gaab et al., 2003)

The usual direct relationship between pathology, nociception and pain is often distorted or absent in individuals suffering from persistent pain. Pain may be determined to a greater extent by central neuronal events than by ongoing pathology or nociception in peripheral tissues. These central neuronal events are often thought to be psychologically or psycho socially determined.

Neuro physiological evidence indicate that persistent functional changes occur within the spinal cord as the result of nociception and suggest that abnormal persistence of these functional changes may contribute to pathologically persistent pain. Its evidence strongly suggests that prior pathology or nociception can induce persistent changes in nociceptive spinal neurons. These neurons become intensely responsive even to non nociceptive afferent activity. This has important implication for understanding, preventing, and treating many pathologic pain syndrome, including idiopathic LBP and persistent
pain associated with failed back surgery. This explains the inefficacy of pain intervention on addressing nociceptive mechanism. These patients may indeed be suffering primarily from non nociceptive rather than nociceptive pain.

Pain is an extremely salient phenomenon in human life and is typically the symptom that brings a person to seek medical care (Safer, et al., 1979). People will often tolerate the most annoying and sometimes the most apparently serious symptoms as long as they feel no pain. For many, the presence of pain is what suggests danger. When in pain they fear the pain and simply want the pain to be stopped (Zborowski, 1952). The lack of pain may diminish a person’s incentive to seek medical treatment.

The pain is necessarily subjective. There may be few objective signs to judge the severity of reported pain, and many patients have no visibly obvious handicap. Chronic pain changes people, affecting their personal working lives and ultimately their personality.

Pain is an abstract concept which patients describe as a personal sensation of ‘hurt’. This sensation is conceived as a signal from damaged tissues aimed at protecting the individual from harm. Hurt implies harm with all its dire consequences.
Bonica (1953) classified chronic pain into three groups

- Persistent peripheral noxious stimulants (from injured tissues)
- Neuropraxis pain
- Learned pain behavior

Bonica (1953) claims that patients belonging to the first and second group may start showing, learned pain behaviour, resulting in chronic pain. The pain begins as an acute nociceptive sensation but persists long after the causative agent which caused the injury functions to exist. This constitutes the benign chronic pain.

Pain is an emotional and sensory discomfort that is usually (although not always) related to tissue damage. More globally pain is defined as a state of physical, emotional or mental lack of well being, an uneasiness that ranges from mild discomfort or dull distress to acute often unbearable agony. This may be generalized, localized and is the consequence of being injured or hurt physically or mentally and that usually produces a reaction of wanting to avoid, escape or destroy the causative factor and its effects (Merriam Webster’s Medical Desk Dictionary 1996). Pain involves 'the total experience of some noxious stimulus which is influenced by current context of the pain, previous experiences, learning
history and cognitive processes’ (Fuerstein, et al 1987). Pain has also been defined as a psychological experience that includes.

1. A personal private sensation of hurt
2. A harmful stimulus which signals current or impending tissue damage.
3. A pattern of response which operate to protect the organism from harm.

‘In some respect pain is a sensation, and in some other respect it is an emotional motivational phenomenon that leads to escape and avoidance behaviour’ (Weisenberg, 1997). Defining pain as a construct is difficult as the experience of pain is quite unmistakable to the patient.

**Importance of depression and anxiety as a tool in chronic low back pain researches**

High degree of co morbidity is seen with reports of psychological symptoms and complaints along with CLBP. Chronic back pain patients often show a fear and depression related behaviour with social retreat and less physical activity. Increasing pain is associated with decreasing muscular capacity of the spine stabilizing muscular system. Psychiatric disorders are significantly prevalent in those reporting
CLBP compared to those without CLBP in general population. The fewer the neurological and structural deficit found by somatic examination, more the psychiatric symptoms. More widespread pain is associated with more disability. Number of pain complaints has been found to increase the likelihood of psychopathology. Anxiety, depression, a number of coping strategies and a sensation of being sick all time are associated with chronic LBP and its chronicity. Chronic back pain often has been long associated with emotional distress, but it is also observed that individuals with intractable back pain frequently report multiple somatic complaints beyond pain itself. On the one hand, this overlap can be attributed directly to the combined physical and psychological consequences of persisting pain. Alternatively, individuals with back pain tend to be regarded as somatising patients, who express psychological and social distress as persistent, medically unexplained physical symptoms. The limited efficacy of treatment for back pain has been attributed to a failure to appreciate the psychosocial setting of pain and its associated complaints. Certain psychiatric syndromes appear to precede chronic low-back pain (substance abuse and anxiety disorders), whereas others
(specifically, major depression) develop either before or after the onset of chronic low-back pain. This reveals the importance of clinicians having awareness of potentially high rates of emotional distress syndromes in chronic low back pain. Concurrent psychopathology in CLBP cases is associated with poor prognosis, poor outcome and high health care utilisation. Psychological stress may result in numerous physical effects, including the following: Stress affects immune responses through the hypothalamus-pituitary-adrenal axis and the sympathetic nervous system. Neuropeptides and neurotransmitters are released, triggering various pain responses.

A psychogenic origin of persistent LBP syndrome is supported on the basis of the following characteristics:

1. Occurrence and persistence of LBP in the absence of identifiable adequate pathology

2. Pain due to normal non noxious stimuli.

3. The resistance of pain to pharmacological anti nociceptive intervention.
4. Diffuseness or distribution of pain pattern not restricted to the
distribution of the potentially involved peripheral nerve.

5. Its relief by placebo.

In chronic pain it is sometimes very hard to disentangle depression
from pain. Pain makes depression worse and depression makes pain
worse. In chronic pain, distress and disability may also amplify the
pain.

Acute pain often is not always accompanied by the reaction of anxiety.
The anxiety may be a manifestation of fear, of possible ominous nature
of pain. Anxiety may occur as a resentment of the inconvenience of the
disabling pain. Anxiety may be a feeling of helplessness at controlling
the symptoms and of decreasing intensity and duration of annoyance.
Anxiety may be the conjoining of previously experienced similar pain
and its sequelae in self or in an acquaintance.

The anxiety has been experimentally shown to maximize the intensity
of the pain and its resultant impairment. Anxiety has, as well as
psychologically enhancing pain appreciation, been considered to have
a hormonal and a chemical relationship. Anxiety also increases the
muscular reactions by exciting exaggerated muscular contraction and
tonus which in itself becomes a source of pain. The muscular excessive tone has an adverse effect on the tissue that is involved at the nociceptive site.

The cycle of stress, anxiety tension and pain is well established. The initial stress in the LBP is mechanical and hormonal or chemical from an external insult. This can be considered as somatic because it originates as a nociceptive tissue locus. If at the onset or shortly after onset anxiety is added, the cycle is initiated. Tension enters the picture as a muscular component of the cycle. This tension may be protective in the beginning and allows healing and avoid further injury to inflamed parts. This tension is at first reflexive, but with onset of anxiety the tension becomes a psychological component and can perse, become the site of tissue pain.

As the cycle progresses, the aspects of pain expounded by Brena (1978) emerge: disability, drugs, dependence and depression. The cycle becomes somatic going to anxiety dependency & disability.

The acute pain if adequately addressed, benign chronic pain syndromes would not result. Many cases of acute LBP fail to address the process of acute anxiety. Modalities of questionable value to relieve or remove
the cause are employed which in most of the cases do not give full relief to the patient. The duration of the treatment reinforces the patient that the condition is severe and serious and completely organic. The terms given to the patient are mostly obscure and make the patient believe that the disease is something incurable. But the patient believes the state and succumbs to their expected sequelae. Treatments given to the condition reinforce the impression that the patient has serious condition. The condition progresses with a personality correlation. The treatment given for these conditions often failed, thus reinforcing the impression that the patient invariably has a serious organic condition. The patient may who may be low in self esteem, mildly depressed, anxious, angry, prone to helplessness, susceptible to hysteria or not assertive succumbs to these diagnosis and treatment failure. Chronic pain results from this.

Recognition of the patient who is prone to become a chronic pain patient is difficult and often impossible. Numerous tests, examinations and treatments ensue and the organic pain causation factor becomes deeply engrained.
Cailliet (1992) makes certain observation that leads to ascertaining the proneness of development of chronic pain.

1. Chronic anxiety that the patient manifest by being irritable, anxious and over reactive to essential minor incidents like neck and shoulder pain, chronic headache and temporo mandibular joint symptoms.

2. Misuse of medicine that may be relaxant needed for sleep, for relaxation to get through a trying experience or that may be pain killers are used in large doses, yet do not give any relief.

3. Unrecognized depression express by the patient such as waking up tired every day even after a good night’s sleep or no desire to pursue normal activities. Disinterest in environment, spouse, children and social activities also indicate depression.

4. Presence of litigation in which something or someone caused this and will pay for my torment. This is often, compounded by a supporting attorney who is not brought into the medical problem by the physician.
5. Unresolved anger at ‘something or someone having caused or aggravated the LBP’.

6. Family influence in which spouse, child or near relative is accused of not helping or even of being a causative factor.

7. Cultural factors have been claimed to be the contributing factors to over reaction to pain. Patients of Italian, Mexican, Jewish, origin are claimed to be more emotional and less stoic where as Irish, English and German cultures are more stoic and less demonstrative.

8. People who lack assertiveness or are indecisive tend to be prone to developing chronic pain behavior.

**Somatoform and co-morbidities**

There are studies reporting that somatoform disorders in general or some in particular manifest high co morbidity with other axis I diagnoses, mainly depressive and anxiety disorders which indicate that special attention must be paid to the interaction between somatoform disorders, other clinical syndromes, and personality structure at the level of both clinical and research practice. One possibility may be that somatoform disorders are masked expressions of depression or
anxiety and, in the case of co-morbidity, are sub symptoms of a depressive and/or an anxiety syndrome. The most frequent co morbid diagnoses are depressive disorders, i.e., dysthymia and major depression followed by anxiety disorders, mainly panic disorder.

Increased pain behaviour and catastrophising is seen in somatoform pain disorder. This also affects the health related quality of life. This also found to affect the subjective wellbeing as well as functioning. Psychosocial determinants are involved in the pain chronification. Melzack 2001 highlights the importance of interaction of stress factors and the neural net work.

Compared to the lower and upper extremity pains, chronic low back pain disability patients were found to have more perceived disability despite improvements in functional disability. Disparity between perceived disability and functional disability may be specific to back pain (Bettina2008, Carleton 2010).

**Placebo in pain researches and Homoeopathic practice**

Pain relief in response to placebo is well known, even when the pain is clearly of somatic origin. And by itself, the placebo response indicates nothing other than an individual is a placebo responder. The implication
that pain is solemnly of a higher order CNS (psychogenic) origin cannot be inferred, as with all painful syndromes, the interpretation of pain as being psychogenic depends on validly defining other characteristic of the syndrome that would support psychogenicity.

There exists a neuro physiological basis for sympathetic involvement in LBP, although the extent of this involvement is unknown. Understanding the physiological mechanism that may mediate the placebo response may offer insights concerning the control of LBP.

Czerniak (2012) in an article comes up with placebo controlled trials in research and clinical practice. Substances and interventions with no specific therapeutic effect have been in use since the dawn of history. The term placebo has first been mentioned in the Scriptures, but it was not until the 19th century that it appeared in a medical context. Although lay people like Voltaire, and physicians as Sir William Osler, have raised the possibility that much of what physicians did had no specific therapeutic effect, this notion was not shared by the public at large or by the medical profession. It was only by the end of the 18th century that a placebo-controlled trial has been conducted, repudiating the therapeutic effect of mesmerism. The advent, in the late 1940s, of
effective treatments, which also had serious adverse effects, made the
distinction between placebo and putative, active drug effects more
relevant and urgent, and cleared the way for double-blind, randomized,
placebo-controlled trials. This in turn triggered an ethical debate on the
use of placebo, both in research and in clinical practice. Anthropologists, sociologists, physiologists, and medical researchers
are all focusing their efforts on understanding the mechanism, role and
modulating factors of placebo. A placebo is a simulated or otherwise
medically ineffectual treatment for a disease or other medical condition
intended to deceive the recipient. Sometimes patients given a placebo
treatment will have a perceived or actual improvement in a medical
condition, a phenomenon commonly called the placebo effect.

In medical research, placebos are given as control treatments and
depend on the use of measured deception. Common placebos include
inert tablets, vehicle infusions, sham surgery, and other procedures
based on false information. However, placebos may also have positive
effect on a patient's subjective experience who knows that the given
treatment is without any active drug, as compared with a control group
who knowingly did not get a placebo. In one common placebo
procedure, however, a patient is given an inert pill, told that it may improve his/her condition, but not told that it is in fact inert. Such an intervention may cause the patient to believe the treatment will change his/her condition; and this belief may produce a subjective perception of a therapeutic effect, causing the patient to feel their condition has improved or an actual improvement in their condition. This phenomenon is known as the placebo effect.

Placebos are widely used in medical research and medicine, and the placebo effect is a pervasive phenomenon; in fact, it is part of the response to any active medical intervention. Kaptchuk, 2010. Hróbjartsson, 2003 in an article opines "It is important to distinguish the very respectable, conscious use of placebos. The effect of placebos has been shown by randomized controlled trials to be very large. The placebo effect points to the importance of perception and the brain's role in physical health. However, the use of placebos as treatment in clinical medicine (as opposed to laboratory research) is ethically problematic as it introduces deception and dishonesty into the doctor-patient relationship." Eccles, 2002 in an article opines that the United Kingdom Parliamentary Committee on Science and Technology (2010)
has stated that: "...prescribing placebos... usually relies on some degree of patient deception" and "prescribing pure placebos is bad medicine. Their effect is unreliable and unpredictable and cannot form the sole basis of any treatment on the NHS."

Since the publication of Henry K Beecher’s *The Powerful Placebo* in 1955, the phenomenon has been considered to have clinically important effects. This view was notably challenged when, in 2008, a systematic review of clinical trials concluded that there was no evidence of clinically important effects, except perhaps in the treatment of pain and continuous subjective outcomes (David, 2008).

A study was based on the unpublished documents like patients’ letters in the Archives of the Institute for the History of Medicine of the Robert Bosch foundation in Stuttgart, the critical edition of Hahnemann’s case journals and the editorial comments. In the study Jutte (1999) opines that Hahnemann was the first physician who administered placebos to the patients (54-86% prescriptions). He had differentiated clearly between homoeopathic medicines and nonmedical pharmaceutical agents (sham medicine). The rationale behind this practice was that Hahnemann was aware about the fact that
patients were used to taking medicines very frequently, and the placebos helped to please the patients.

**Treatment of chronic LBP**

The concept of treating a patient with chronic pain does not include any one accepted method but there are many accepted components of programs that are effective.

Acceptance of the program: clear objectives of the program made clear to the patient, tapering of the drugs which created a dependency. Individual, group and family psychotherapy are done to help the patient manage stress, decrease anxiety, limit reaction and learn assertive behaviour.

Relaxation therapy: General physical reconditioning and nutritional reconditioning, periodic documentation of the progress of the disease vocational evaluation and counselling.

Homoeopathically a chronic low back pain is managed like any other chronic diseases. The detailed case taking helps in understanding the general symptoms which include the mental generals as well as the physical generals, the particular symptoms as well as the common symptoms. The chronic low back pain cases may present with very few
symptoms, as a local malady (one sided diseases). In such cases too, the existing symptoms, even if very few are considered. The patient’s mental and physical constitutional built up are considered. This is true of all types of low back pain disorder irrespective of the diagnosis (Hahnemann, 2006). After the detailed interrogation, he symptoms are analysed and evaluated according to the hierarchy of the symptoms. The general symptoms which affect the patient as a whole are given more importance when compared to the physical complaints or the diagnostic symptoms. After thus constructing a symptom totality, the medicines are selected with the help of repertorisation. Repertorisation is the process of reaching at the true similimum (similar remedy) with the help of different suitable repertories. The remedy which has the most similarity with the existing symptomatology of the case is selected from the group of similar remedies thus obtained after repertorisation, with the help of a Materiamedica.

The remedy selected is prescribed to the patient, and according to the principles a single remedy is prescribed in minimum doses and repeated only when its action is exhausted as shown by the reappearance of symptoms. The process is continued till there is a
permanent relief. Meanwhile all the factors which act as triggering or maintaining the disease condition are found out and tried to remove because these may act as an obstacle to cure. The disease prognosis is assessed according to the Kent’s observations (Kent, 2006).

Only diseases which are in the reversible limits can be treated therapeutically (Hahnemann, 2006, Kent, 2006). The disease conditions where there are permanent structural deviations can only be palliated and not fully cured. Thus low back pain disorders which have limited structural damages are more amenable to treatment.

The somatoform pain disorders where there are symptoms without a physical diagnosis too are managed in similar way. (Hahnemann, 2006) advices to give friendly exhortations and advices (behavioural therapy) in conditions wherever necessary or else these may act as obstacles to cure. (Hahnemann, 2006) also mentions about the healthy diet and regimen for the treatment in chronic cases.
Section B- Related Studies

This section deals with the

- Studies related to back pain, somatoform disorders and the relation of these conditions with anxiety and depression
- The effectiveness of homoeopathy in low back pain
- The effectiveness of homoeopathy in anxiety, depression and wellbeing with or without low back pain.

Related studies on Homoeopathic effectiveness

The Lancet of August 27, 2005 featured a cluster of articles highly critical of homeopathy which attracted considerable media attention. They mentioned ‘homeopathy is no better than placebo’ based on a meta-analysis of clinical trials of homeopathy compared with clinical trials of allopathic (conventional medicine) Shang, 2005. The meta-analysis was accompanied by a short, anonymous editorial entitled ‘The end of homoeopathy’ calling for ‘doctors to be bold and honest with their patients about homeopathy's lack of benefit and commentary from the Dutch epidemiologist Jan Vandenbroucke, reflecting on the ‘growth of truth’, including the relationship between bias, background knowledge and the concordance of clinical results with laboratory
science findings. Vandenbroucke concludes that the ultimate proof of the validity of a scientific or medical idea is extent to which it changes reality. The meta-analysis at the centre of the controversy is based on 110 placebo-controlled clinical trials of homeopathy and 110 clinical trials of allopathic (conventional medicine), which are said to be matched. These were reduced to 21 trials of homeopathy and 9 of conventional medicine of ‘higher quality’ and further reduced to 8 and 6 trials, respectively, which were ‘larger, higher quality’. The final analysis, which, concluded that ‘the clinical effects of homoeopathy are placebo effects’ was based on just the eight ‘larger, higher quality’ clinical trials of homeopathy.

Endler, 2010 in an overview about basic research studies in high homeopathic potencies that have been subjected to laboratory-internal, multicenter or independent repetition trials considered biochemical, immunological, botanical, cell biological and zoological studies on high potencies, i.e. beyond a dilution of $10^{-23}$. Main sources of information were reviews, personal contact with members of the homeopathic basic research community, and the MEDLINE and HOMBREX databases. Studies were extracted from the publications and sorted according to
repetition type (laboratory-internal, multicenter, or independent). A total of 107 studies were found. Of these, 30 were initial studies. In the attempt to reproduce one of these initial studies, 53 follow-up studies yielded comparable effects (35 laboratory-internal, 8 multicenter, 10 independent repetitions), eight studies showed a consistent, yet different result from the initial study (2 laboratory-internal, 2 multicenter, 4 independent repetitions), and 16 studies yielded no effects (5 laboratory-internal, 2 multicenter, 9 independent repetitions). When all repetitive studies are considered, 69% reported effects comparable to that of the initial study, 10% different effects and 21% no effects. Independently performed repetition studies reported 44% comparable effects, 17% different effects and 39% no effects. Endler (2010) identified 24 experimental models in basic research on high homeopathic potencies, which were repeatedly investigated. 22 models were reproduced with comparable results, 6 models with different results, and repetition showed no results for 15 models. Independent reproductions with either comparable or different results were found for seven models.

Using market samples of metal-derived medicines from reputable manufacturers, Chikramane in 2010 demonstrated the presence of
physical entities in these extreme dilutions, in the form of nanoparticles of the starting metals and their aggregates, by Transmission Electron Microscopy (TEM), electron diffraction and chemical analysis by Inductively Coupled Plasma-Atomic Emission Spectroscopy (ICP-AES). This study indicates the presence of particles in ultra micro dilutions.

Mathie, 2003 in a systematic review examines the cumulative research from randomised and/or double-blind clinical trials (RCTs) in homeopathy for individual medical conditions reported since 1975. This was done to know about the statistically significant evidence from published RCTs on homeopathy. For the purpose he analysed 93 substantive RCTs that compare homeopathy either with placebo or another treatment. He found that 50 papers reported a significant benefit of homeopathy in at least one clinical outcome measure, 41 that fail to discern any inter-group differences, and two that describe an inferior response with homeopathy. Considering the relative number of research articles on the 35 different medical conditions in which such research has been carried out, the weight of evidence currently favours a positive treatment effect in eight: childhood diarrhoea, fibrositis, hayfever, influenza, pain (miscellaneous), side-effects of radio- or
chemotherapy, sprains and upper respiratory tract infection. Based on published research to date, the researcher opines that it seems unlikely that homeopathy is efficacious for headache, stroke or warts. The researches were insufficient to draw any conclusions about any other medical conditions. Based on the study he emphasised the need for much more and better-directed research in homeopathy. A fresh agenda of enquiry should consider beyond (but include) the placebo-controlled trial. Each study should adopt research methods and outcome measurements linked to a question addressing the clinical significance of homeopathy's effects.

In a similar study to compare the representation of homeopathic clinical trials published in traditional science and complementary and alternative medicine journals Caulfield, 2005 performed literature searches using Medline (PubMed), AMED and EMBASE computer databases. All articles published in English over a 10 years period were included and the search yielded 251 articles overall, of which 46 systematically examined the efficacy of homeopathic treatment. The search finally gave forty-six peer-reviewed articles published in a total of 23 different journals (26 in CAM journals and 20 in conventional journals). Of those
in conventional journals, 69% reported negative findings compared to only 30% in CAM journals. Very few articles were found to be presented in a "negative" tone, and most were presented using "neutral" or unbiased language. A considerable difference exists between the numbers of clinical trials showing positive results published in CAM journals compared with traditional journals. Caulfield claimed to find only 30% of those articles published in CAM journals presented negative findings, whereas over twice that amount were published in traditional journals. These results suggest a publication bias against homeopathy exists in mainstream journals. Conversely, the same type of publication bias does not appear to exist between review and meta-analysis articles published in the two types of journals.

In a criterion based meta-analysis Kleijnen, (1991) assessed the methodological quality of 107 controlled trials in 96 published reports after an extensive search. Trials were scored using a list of predefined criteria of good methodology, and the outcome of the trials was interpreted in relation to their quality. Controlled trials published worldwide were considered. Trials of classical homoeopathy and several modern varieties were considered separately. In 14 trials some
form of classical homoeopathy was tested and in 58 trials the same single homoeopathic treatment was given to patients with comparable conventional diagnosis. Combinations of several homoeopathic treatments were tested in 26 trials; isopathy was tested in nine trials. Most trials seemed to be of very low quality, but there were many exceptions. The results showed a positive trend regardless of the quality of the trial or the variety of homeopathy used. Overall, of the 105 trials with interpretable results, 81 trials indicated positive results whereas in 24 trials no positive effects of homoeopathy were found. The reviewer opined that results of the review may be complicated by publication bias. In the study the evidence of clinical trials is positive but not sufficient to draw definitive conclusions because most trials are of low methodological quality and because of the unknown role of publication bias. This indicates that there is a legitimate case for further evaluation of homoeopathy, but only by means of well performed trials.

In a systematic review, Jonas 2001 compared the quality of clinical-trial research in homeopathy to a sample of research on conventional therapies using a validated and system-neutral approach. All clinical
trials on homeopathic treatments with parallel treatment groups published between 1945 and 1995 in English were selected. All were evaluated with an established set of 33 validity criteria previously validated on a broad range of health interventions across differing medical systems. Criteria covered statistical conclusion, internal, construct and external validity. Reliability of criteria application is greater than 0.95. In all 59 studies met the inclusion criteria. Of these, 79% were from peer-reviewed journals, 29% used a placebo control, 51% used random assignment and 86% failed to consider potentially confounding variables. The main validity problems were in measurement where 96% did not report the proportion of subjects screened and 64% did not report attrition rate. 17% of subjects dropped out in studies where this was reported. There was practically no replication of or overlap in the conditions studied and most studies were relatively small and done at a single-site. Compared to research on conventional therapies the overall quality of studies in homeopathy was worse and only slightly improved in more recent years. He concluded that clinical homeopathic research is clearly in its infancy with most studies using poor sampling and measurement techniques,
few subjects, single sites and no replication. Many of these problems are correctable even within a "holistic" paradigm given sufficient research expertise, support and methods.

**Studies on low back pain**

Low back pain is one of the most common and incapacitating disorders in modern society according to Dixon 1976; Anderson 1985. About 80-88% of people experience incapacitating low back pain during their adult lives (Nachemson, 1971; Nachemson, 1976; Nachemson, 1977; Haldeman, 1980; Friedman, 1984). Though acute low back pain in most of the cases is a self limiting transient problem (Dixon, 1976), chronic low back pain and its associated disabilities represent a significant health problem (Kepes, 1985). Back pain is the second leading cause of industrial absenteeism, behind only to the common cold (Bronfort, 1984). It is the second most common reason why patients visit primary care physicians and is the number one cause of disability in men aged 31 to 45 (Osterweis, 1986).

**Epidemiology and clinical features**

Studies have reported point prevalence rates between 12% and 35% and lifetime prevalence rates ranging from 49% to 80% (Biering-
According to many researchers, low back pain is a daunting problem (Anderson, 1981). In a study, Ihleback et al., (2002) reported that, 40% of the general population were found to be affected by low back pain which indicates the quantum of affection.

Symptoms of low back pain usually begin in the late twenties with the highest incidence between the ages of 30 and 50 years and equal incidence in men and women (Friberg, 1946). According to many authors, back pain may have a multifactorial etiology and there may be several types of back pain which closely mimic each other compounding the problem of back pain mechanism. The region of low back pain is extremely complex, both anatomically and functionally. Diverse prognostic factors such as educational status, age gender (Hoy et al., 2010), physical factors such as the level of pain intensity and disability perceived by the patient, psychological factors such as depression and anxiety (Main, 2010), pain specific concepts such as fear avoidance, catastrophizing and illness perception, occupational factors such as employment status (Dunn, 2011, Grotle, 2010) all play
a role in the disease perpetuation. Psychosocial researchers have found common psychological and social traits in people who have developed chronic disability due to LBP. Many subjects with chronic LBP have been reported to have a psychological profile that predisposes them to develop chronic pain. Additionally, people aged between 50 and 60 years are more likely to become disabled due to LBP (Burton et al., 1995) People who have unrealistic beliefs about their pain and the nature of their disease (Wadell, 1992).are also prone to develop chronic low back pain.

The impact of gender on the development of back disorders has been widely researched (Burchfield, 1992, Skovron, 1994). Both men and women are found to have equal incidence of low back pain. Most studies show a higher rate of injury for men, but when the strain on the job is considered, the gender difference disappears (Rybock, 1994). Past the age of forty, the risk for women increases much faster than for men perhaps related to osteoporosis, obesity, endocrine misbalanced etc. Kostova, 2001 also supported that back disorders are related to gender and that men are probably more susceptible to developing back pain syndromes than women (Foppa, 1996).
People who seek multiple investigations and treatment (Waddel, 1992) people with low educational achievement or low status occupation (Cats-Baril and Frymoyer, 1991; Frymoyer, 1992); people who have pending compensation issues (Tait and Chibnall, 2001); people with fear-avoidance beliefs—i.e. that a fear of activity may be more disabling than the original injury (Vlaeyen, 1995; Fritz et al., 2001) and people who exhibit ‘illness behaviour’, which may include attention seeking, grimacing, catastrophising about their problems or LBP, inappropriate coping strategies, excessive use of splints, braces, walking aids, and passive rather than active treatment modalities are the people who tend to develop chronicity. A patient’s general physical fitness may be a poor predictor of chronic incapacity (Deyo & Weinstein., 2001).

In Britain, between the years of 1986 and 1992 back pain and disability due to it was seen to rise by 104%, whereas disability from other reasons rose by 60% (Klaber-Moffett, 1995). As a result, a survey by Department of Social Security (DSS, 1998) in 1994 to 1995 shows that a million production days were lost due to incapacity to work related to back pain. Recent surveys also indicate that back pain results in restrictions of social and other activities and has substantial impact on
the lifestyle of those affected (Office of Population Censuses and Surveys (OPCS), 1997; Walsh et al., 1993; Croft et al., 1994). Similar findings have been reported in other countries (Andersson et al., 1983; Grazier et al., 1984; Abenhaim et al., 1995; Spitzer et al., 1987; Waddell, 1987; Frymoyer and Cats-Baril, 1991; Van Tulder, 1997).

**Effects of chronic low back pain**

Kostova, 2001 in a study points out that LBP often causes severe emotional, physical, economic and social stress and has a negative impact on the patients and their families (Croft, 1994). Hence, he points out that, LBP is associated with high costs, as well as psychosocial and disabling effects. About 31 million Americans experience back pain which is the primary cause of limited activity for young adults. Back pain alone result in about 28 billion dollar in lost work productivity annually as mentioned by Rizzo et al., 1996. In one group of patients who had spine injury and associated pain, total cost of care average was 41 thousand 727 dollars per case (Earman et al., 1996). Although use of health care services is affected by numerous factors, pain alone plays a significant role in service utilization, especially in the elderly (Cronan et al., 1995).
The Global Burden of Disease study 2010 reported LBP prevalence of 632 million persons making it the leading cause of Years Lived with Disability (Vos et al 2012). LBP is often managed with costly or invasive interventions of questionable benefits and safety, including diagnostic imaging, opioid analgesics, epidural corticosteroid injections and surgery (Deyo et al., 2009). Low back pain is the second important reason to see a medical practitioner all over the world. In US LBP is the most common reason to use complementary and alternative medicine (Barnes et al., 2008).

The health care cost exceeds $8 billion annually in the United States alone, according to Osterweis, 1987. In Britain the economic losses due to low back pain amounts to around 300 million pounds a year according to a report by Maniadikasa, 2000. Maniadakisa, 2000 reported the results of a `cost-of-illness study of the socio-economic costs of back pain in the UK. It estimated the direct health care cost of back pain in 1998 to be £1632 million. Approximately 35% of this cost related to services provided in the private sector and thus is most likely paid directly by patients and their families. With respect to the distribution of cost across different providers, 37% related to care
provided by physiotherapists and allied specialists, 31% incurred in the hospital sector, 14% relates to primary care, 7% to medication, 6% to community care and 5% to radiology and imaging used for investigation purposes.

Overall, back pain is one of the most costly conditions for which an economic analysis has been carried out in the UK and this is in line with findings in other countries. A survey in Sweden suggested that low back pain increased the number of work days lost from 7 million in 1980 to four times that (28 million) by 1987 in a study by Nachemson, Waddell, & Norlund, 2000.

The high prevalence of back pain makes it a leading reason for physician visits, hospitalisations and other health and social care service utilization (Manchikanti, Abdi & Atluri 2009).

Most studies of inter relationships between LBP and psychological factors emphasise either behavioural aspects, compensation payments, secondary gains or depression, (Dzioba & Doxey1984, Frymoyer & Cats-Baril 1987, Frymoyer et al 1985., Frymoyer, Pope & Clements 1983). These approaches describe the psychological and

**Medically unexplained or somatoform low back pain**

Despite advances in imaging, in most patients, it is impossible to determine whether identifiable structural or mechanical abnormalities are responsible for the symptoms (Deyo, 2002., Nachemson et al, 2000). There is often a mismatch between objective findings and symptoms. Moreover, even when anatomic abnormalities are detected, the significance is unclear, since bulging disks or annular tears are found in high percentages of asymptomatic individuals (Jensen et al, 1994., Boden, 1992). This mismatch between anatomic abnormalities and symptoms has led to studies of the psychosocial factors that may contribute to CLBP. These studies suggest that increasing age, female sex, lower levels of formal education, depression, stress, job dissatisfaction, and disability & compensation issues may play some role in expression of symptoms and in chronicity (Bigos et al, 1991., Burton, Tillotson, Main & Hollis, 1995., Croft & Rigbi, 1995., Frymoyer et al, 1985., Greenough & Fraser, 1991). However, all of the known anatomic, demographic, and psychosocial factors that might
cause CLBP do not explain the symptoms in a significant number of subjects (Linton, 2000, Clauw, William & Lauerman, 1999). These individuals are sometimes referred to as having “idiopathic” or “nonspecific” CLBP. Chronic pain greatly diminishes quality of life and increases anxiety and depression (Riley et al., 2001; Dworkin, 2002).

Chronic low back pain in most of the cases do not have physical signs as observed by Mellin, 1986, 1987 & Jayson, 1997) and the pain and its associated disabilities represent a significant health problem (Kepes & Duncalf, 1985). Chronic low back pain (CLBP) patients often are described as "somatizers", who report multiple somatic complaints beyond back pain itself. Bacon et al (1994) who was of the opinion that patients with CLBP were of somatising nature, rigorously assessed somatization symptoms in a sample of patients not selected for psychiatric or pain clinic referral. He found that, 25.8% of CLBP patients reported a lifetime history of 12 or more somatic symptoms, as compared to only 4.1% of controls. In the less symptomatic ranges, patients still generally reported more symptoms than controls, with 51.5% of patients vs. 8.2% of controls reporting 7-11 symptoms, and 22.7% vs. 87.8% of controls reporting 0-6 symptoms (p < .001). Major
depression and alcohol dependence were significantly associated with increased severity of somatization (p < .05). Lower mood and increased impairment, but not pain intensity, were related to greater number of somatic complaints. Symptoms of somatization are prevalent, but not universal, in CLBP and the pattern of these symptoms is reminiscent of the "spectrum of severity" reported in other medical populations. Recognizing this spectrum of somatization may lead to better patient-treatment matching and improved clinical outcomes Chronic low back pain as a leading symptom of a somatoform pain disorder is a remnant diagnostic category for many physicians, general practitioners and orthopaedic surgeons. Patients with somatoform pain disorder (ICD-10: F45.4) are often not diagnosed until after several years and multiple diagnostic procedures, in some cases after iatrogenic impairment. A more precise knowledge of the disorder can prevent developing chronicity of the pain (Egle, 2008).

A European survey estimated the cost of somatoform disorders across Europe to be 22 billion Euro/year. This makes the cost of somatoform disorders in the range of that for major disorders like multiple sclerosis, Parkinson disease (Olesen, 2012)
A review of patterns in medical care use demonstrate that many individuals who are having mental health difficulties instead of seeking a psychologist or psychiatrist, seek care by presenting physical symptoms to a physician (Ford, 1995).

**Co-morbidities and chronic low back pain both of pathological and somatoform nature**

High degree of co morbidity is seen with reports of psychological symptoms and complaints along with CLBP (Carnes et al., 2007, Hagen et al., 2006, von Korff et al., 2005, Kinney et al., 1993, Polatin et al., 1993). Chronic back pain patients often show a fear and depression related behaviour with social retreat and less physical activity. Increasing pain is associated with decreasing muscular capacity of the spine stabilizing muscular system. Psychiatric disorders are significantly prevalent in those reporting CLBP compared to those without CLBP in general population (Demyttenaere et al., 2007). The fewer the neurological and structural deficit found by somatic examination, more the psychiatric symptoms (Mayr et al., 2003, Magni & Mersky, 1987). More wide spread pain is associated with more disability (Kamaleri et al., 2008). Number of pain complaints has been
found to increase the likelihood of psychopathology (Katon & Sullivan, 1990).

Anxiety, depression, a number of coping strategies and a sensation of being sick all time are associated with chronic LBP and its chronicity. Chronic back pain often has been long associated with emotional distress, but it is also observed that individuals with intractable back pain frequently report multiple somatic complaints beyond pain itself (Pilowsky, 1967). On the one hand, this overlap can be attributed directly to the combined physical and psychological consequences of persisting pain (Sternbach, 1974; Ford, 1983). Alternatively, individuals with back pain tend to be regarded as somatising patients, who express psychological and social distress as persistent, medically unexplained physical symptoms (Ford, 1983). The limited efficacy of treatment for back pain has been attributed to a failure to appreciate the psychosocial setting of pain and its associated complaints (Ford, 1983). Certain psychiatric syndromes appear to precede chronic low-back pain (substance abuse and anxiety disorders), whereas others (specifically, major depression) develop either before or after the onset of chronic low-back pain. This reveals the importance of clinicians
having awareness of potentially high rates of emotional distress syndromes in chronic low back pain. Concurrent psychopathology in CLBP cases is associated with poor prognosis (Linton, 2000), poor outcome (Dersh et al., 2007) and high health care utilisation (Engel et al., 1996). Psychological stress may result in numerous physical effects, including the following: Stress affects immune responses through the hypothalamus-pituitary-adrenal axis and the sympathetic nervous system. Neuropeptides and neurotransmitters are released, triggering various pain responses.

Chronic low back pain has been viewed as a bio-psychosocial phenomenon in which all these factors dynamically interact with each other (Dersh, 2000). Psychological factors such as distress, depressed mood and somatisation were reported to be associated with low back pain. Their presence could predict the transition from acute to chronic low back pain as well. Their role in onset, severity, exacerbation and continuation of pain was also reported (Linton, 2000, Pincus, Burton & Vogel, 2002). Review of literatures regarding psychopathological co-morbidity of chronic low back pain has documented increased prevalence of depression, anxiety, substance abuse, somatisation and
personality disorders in cases of CLBP compared to the general population (Manchikanti, 2002). It was also noted that unrecognised and untreated psychopathology can significantly interfere with successful rehabilitation of back pain patients and also increase pain intensity and disability thus serving to perpetuate pain related dysfunction. Depression and anxiety have been associated with magnification of medical symptoms whereas emotional distress has been connected to physical symptoms by means of autonomic arousal, vigilance and misinterpretation of somatic amplification. Less effective treatment outcome has also been shown to be related to untreated depression associated with CLBP (Manchikanti, 2002).

Polatin, 1993 conducted a study to distinguish the important psychiatric disorders associated with the low back pain excluding somatoform disorders. Two hundred chronic low-back pain patients entering a functional restoration program were assessed for current and lifetime psychiatric syndromes using a structured psychiatric interview to make DSM-III-R diagnoses. Results showed that, even when the somewhat controversial category of somatoform pain disorder was excluded, 77% of patients met lifetime diagnostic criteria and 59%
demonstrated current symptoms for at least one psychiatric diagnosis. The most common of these were major depression, substance abuse, and anxiety disorders. In addition, 51% met criteria for at least one personality disorder. All of the prevalence rates were significantly greater than the base rate for the general population. Finally, and most importantly, of these patients with a positive lifetime history for psychiatric syndromes, 54% of those with depression, 94% of those with substance abuse, and 95% of those with anxiety disorders had experienced these syndromes before the onset of their back pain.

In a study by Reme, Tangen, Moe & Eriksen (2011) CLBP patients had more psychiatric disorder than the general population. Around 16% of the study population was found to have somatoform pain disorder. CLBP patients are regarded by some to be somatising patients who express psychological and social distress through persistent subjective health complaints (Ford, 1983). Kinney et al., 1993 in a study claimed to have found 99% of prevalence of somatoform pain disorder in CLBP population. Dersh et al., 2001 opines that the high prevalence of SPD is universally descriptive of the population. Michalski, 2006 also had a similar opinion on the importance of considering anxiety and
depression in the treatment of low back pain. Katon & Sullivan, 1982; Bridge, 1985 too opines that depression contributes to somatisation and in turn somatisation also worsens depression.

In a study to find out the association between chronic low back pain and psychiatric morbidity in a semi-urban setting of Bankura Sammilani Medical College, Bankura in the Bankura district of West Bengal Khatua, 2011 demonstrated that there was a significant association between psychological co-morbidity and chronic low back pain. Manchikanti 2012 had a similar result in the association between the chronic low back pain and psychiatric morbidity. Polatin, 1993 and Regina & Kinney, 1993 also demonstrated a similar result with a structured clinical interview. In the study by Khatua (2011), somatoform disorder was the most common psychiatric diagnosis followed by depression and anxiety disorder. Polatin et al (1993) reported that in cases of chronic low back pain, somatoform disorder was the commonest psychiatric co-morbidity with CLBP followed by depression, substance abuse and anxiety disorder. Khatua(2011) too revealed that more than one-third cases with CLBP had somatoform disorders. In three earlier studies, the corresponding figure ranged from
16- 26 % (Goldberg & Hillier, 1979., Atkinson, 1991., Manchikanti, 2002). Next to somatoform disorders, depression has been reported in around 30% of the CLBP patients in Khatua’s study. The corresponding figure reported by other researchers ranged from 18-30%. (Manchikanti, 2002, Fishbain, 1997, Magni, 1990). The association between depression and medically unexplained pain has been investigated extensively. Depression has been shown to be positively associated with somatisation and somatoform disorders, in which medically unexplained pain may arise (Lipowsky, 1990, von Knorring, 1994, Jorgensen, 2000, Maier & Falkai, 1999).

Psychological co-morbidity in chronic low back pain varies among several Axes-I conditions like somatoform disorders, anxiety disorders, depression, substance abuse etc. Numerous hypotheses have arisen to explain the mechanisms by which depression might play a role in the aetiology of otherwise unexplained pain (von Knorring, 1994, Maier & Falkai, 1999). Generalised anxiety disorder is the other comorbidity which has been shown to be significantly different among cases (19%) and controls (8%) in many studies. Manchikanti et al., (2012) showed that generalised anxiety disorder was present in 40% cases compared
to 14% controls. Whereas, other studies reported 15% and 20% of chronic pain patients had the same psychiatric disorder (Regina, 1993, Manchikanti, 2012). Asmundson, Jacobson, Alledings, & Norton, G. R. (1996) - showed that 18% of patients with current musculoskeletal pain had comorbid anxiety disorder which was similar to the present study. Other than the above psychopathological disorders certain other disorders namely substance abuse, psychosis NOS and eating disorder in a small percentage of cases as well as controls also are demonstrated.

Bacon (1994) rigorously assessed somatization symptoms in a sample of patients not selected for psychiatric or pain clinic referral. And found that, 25.8% of CLBP patients reported a lifetime history of 12 or more somatic symptoms, as compared to only 4.1% of controls. In the less symptomatic ranges, patients still generally reported more symptoms than controls, with 51.5% of patients vs. 8.2% of controls reporting 7-11 symptoms, and 22.7% vs. 87.8% of controls reporting 0-6 symptoms (p < .001). Major depression and alcohol dependence were significantly associated with increased severity of somatization (p
< .05). Lower mood and increased impairment, but not pain intensity, were related to greater number of somatic complaints.

Review of literatures regarding psychopathological co-morbidity of chronic low back pain has documented increased prevalence of depression, anxiety, substance abuse, somatisation and personality disorders in cases of CLBP compared to the general population (Manchikanti, 2002). It was also noted that unrecognised and untreated psychopathology can significantly interfere with successful rehabilitation of back pain patients and also increase pain intensity and disability thus serving to perpetuate pain related dysfunction. Depression and anxiety have been associated with magnification of medical symptoms whereas emotional distress has been connected to physical symptoms by means of autonomic arousal, vigilance and misinterpretation of somatic amplification. Less effective treatment outcome has also been shown to be related to untreated depression (Manchikanti, 2002).

In an article on the relationship between anxiety and chronic pain Krishnan, 1985 states that the relationship between the two has been poorly studied. The authors studied the occurrence of symptoms of
anxiety in chronic low back pain patients. Anxious mood and other symptoms of anxiety were commonly seen in patients with chronic low back pain. Symptoms of anxiety were more common in patients with depression, especially those with major depression. Anxious mood, tension and general somatic symptoms of the sensory type were more common than any other type of anxiety symptoms. The authors discuss the potential role of anxiety in chronic pain patients (Krishnan, 1985).

In a study Michalski, 2006 confirms the importance of early anxiety and depression screening in patients with low back pain in ambulatory treatment to figure out risks of chronicity and to derive optimal treatment Joukamma, 1994 in an article says that depressive and anxiety neuroses are the most common psychiatric disorders associated with back pain. In assessing the connections between back pain and depression, the different forms of depression should be considered. There are some depressed back pain patients with the traditional depressed mood as the principal symptom of mood disorder. It seems, however, that the depression associated with back pain is usually atypical in nature and that signs of depression other than the depressed mood have to be taken into account.
In a study by Garyfalos (1999) from a total sample of 1,448 psychiatric outpatients, 175 (12.1%) received a diagnosis of a somatoform disorder according to DSM-III-R criteria. One hundred twenty-two (70%) of these patients had another current axis I diagnosis, and this rate increased to 79% (139 of 175) when lifetime psychiatric diagnoses were recorded. The most frequent co morbid diagnoses were depressive disorders, i.e., dysthymia and major depression, and then anxiety disorders, mainly panic disorder.

In an article Petrak, 2003 indicates that increased pain behaviour and catastrophising is seen in somatoform pain disorder. This also affects the health related quality of life. This also found to affect the subjective wellbeing as well as functioning as shown by Turk and Okifuji, 2002. Psychosocial determinants are involved in the pain chronication (Protor, Gatchel, Robinson, 2000, Melzack, 1991, Melzack, 2001) highlights the importance of interaction of stress factors and the neural net work.

Compared to the lower and upper extremity pains, chronic low back pain disability patients were found to have more perceived disability despite improvements in functional disability. Disparity between
perceived disability and functional disability may be specific to back pain (Bettina, 2008, Carleton, 2010).

Polatin, 1993 in a study on two hundred chronic low-back pain patients entering a functional restoration program, assessed current and lifetime psychiatric syndromes using a structured psychiatric interview to make DSM-III-R diagnoses. Results showed that, even when the category of somatoform pain disorder was excluded, 77% of patients met lifetime diagnostic criteria and 59% demonstrated current symptoms for at least one psychiatric diagnosis. The most common of these were major depression, substance abuse, and anxiety disorders. In addition, 51% met criteria for at least one personality disorder. All of the prevalence rates were significantly greater than the base rate for the general population. Finally, and most importantly, of these patients with a positive lifetime history for psychiatric syndromes, 54% of those with depression, 94% of those with substance abuse, and 95% of those with anxiety disorders had experienced these syndromes before the onset of their back pain. These are the first results to indicate that certain psychiatric syndromes appear to precede chronic low-back pain (substance abuse and anxiety disorders), whereas others (specifically,
major depression) develop either before or after the onset of chronic low-back pain. Such findings substantially add to our understanding of causality and predisposition in the relationship between psychiatric disorders and chronic low-back pain. They also clearly reveal that clinicians should be aware of potentially high rates of emotional distress syndromes in chronic low-back pain and enlist mental health professionals to help maximize treatment outcomes (Polatin, 1993).

Jain, 2009 in an article says that chronic lower back pain is a common and frequently disabling problem, but an organic cause cannot always be identified. Pain often co-occurs with mood and anxiety disorders, but when patients present with somatic symptoms in the primary care setting, clinicians often overlook mood and anxiety symptoms. Because appropriate treatment includes both pharmacologic and nonpharmacologic strategies, a team approach that includes both mental health and primary care professionals is warranted to alleviate the patient's pain, manage psychiatric co morbidities, and improve the patient's functioning and quality of life. Additionally, when prescribing pain medication, clinicians should monitor patients for substance misuse (Jain, 2009)
Homoeopathy in Low back pain

The term Low Back pain in Homoeopathy, Complementary/alternative therapies is used for low back pain more frequently than for any other indication, yet evidence for or against their efficacy is fragmentary. Singh 2008 conducted a postal questionnaire survey designed to generate opinion from a systematically identified expert panel on the clinical effectiveness of complementary/alternative therapies for low back pain. For acute uncomplicated low back pain, osteopathy and chiropractic were rated as effective by most experts. For chronic uncomplicated low back pain, most experts considered acupuncture as effective. Experts perceived homeopathy generally as ineffective for any type of low back pain (Singh, 2008)

Stam (2001) investigated whether the homeopathic gel Spiro\textsuperscript{\textregistered} or SRL1 gel (SRL) is equally effective and better tolerated than Cremor Capsici Compositus FNA (CCC) in patients with acute low back pain. In the study he came to the conclusion that homoeopathic ointments were equally effective with that of capsicum based products in the treatment of acute low back pain, however, SRL has a better safety profile. Spiro or SRL1 gel is preferable to Capsicum-based products for the topical
treatment of low back pain, because of the lower risk of adverse effects.

Gmunder and Kissling (2002) conducted a study to evaluate the efficacy of treatment of chronic low back pain during two months either by homeopathy or by standardised physiotherapy. They recruited 43 patients suffering from chronic low back pain in the controlled, randomised prospective study. A comparison of two groups receiving homoeopathy and physiotherapy and placebo and physiotherapy revealed a significant decrease of the Oswestry score in patients treated by homeopathy in the beginning but it could not be repeat later. As the study did not give any confirmatory result, the researchers opined that the study should be repeated with larger sample. To evaluate the details and effects of an individualized homeopathic treatment in patients with chronic low back pain in usual care Witt, Ludke, Baur & Willich (2009) conducted a prospective multicenter observational study. Consecutive patients beginning homeopathic treatment in primary care practices were evaluated over 2 years by using standardized questionnaires. Diagnoses (ICD-9) and symptoms with severity, health-related quality of life (QoL), medical history, consultations, homeopathic and
conventional treatments, and other health service use were recorded. One hundred twenty-nine adults (64.3% women, mean age 43.6 +/- 12.7 y) were treated by 48 physicians. The patients mainly had chronic low back pain (average duration 9.6 +/- 9.0 y) and other chronic diseases. Nearly all the patients (91.3%) had been pretreated. The severity of the diagnoses and complaints showed marked and sustained improvements with large effect sizes (Cohen's d from 1.67 to 2.55) and quality of life improved accordingly (SF-36 physical component scale d = 0.33; mental component scale d = 0.54). The use of conventional treatment and health services decreased markedly: the number of patients using low back pain-related drugs was decreased to half of the baseline.

From the study Witt (2009) concluded that classic homeopathic treatment represents an effective treatment for low back pain and other diagnoses. It improves health-related quality of life and reduces the use of other healthcare services.

Adler, 2011 points out that use of palliatives for chronic diseases like low back pain will only remove a symptom but not the basic disease. The use of non steroidal anti-inflammatory agents can produce a
contrary rebound effect as anticipated by Hahnemann. Instead Homoeopathy can cure the disease.

**Homoeopathy in Mental conditions**

There is limited available data to describe the full range of conditions treated by homeopaths, how commonly they are seen, or how effective treatment is. It is apparent however that many patients seek help for anxiety and depression and a study involving over 6,500 patients at the Bristol Homeopathic Hospital demonstrated that they are in the top 10 most commonly referred conditions to this NHS provision (Spence et al., 2005). A survey of French homeopathic general practitioners had earlier demonstrated that stress and anxiety was one of the most common complaints that clients presented with Trichard, Lamure, & Chauferrin, G. (2003). A service evaluation of members of the Society of Homeopaths concluded that the most commonly cited reasons for seeking treatment fell within the category of mental and emotional problems (Relton et al., 2007). A survey of 200 UK homeopaths (Chatfield & Duxbury, 2010) suggested that a substantial number of people with mental health concerns are choosing homeopathic treatment.
Homoeopathy in Anxiety and Depression

In a study by Davidson et al., (1997) to report the use of homeopathic treatment in patients with depression and anxiety individually selected homeopathic remedies were used on an outpatient basis to treat 12 adults who had major depression, social phobia, or panic disorder. The patients either requested homeopathic treatment or received it on a physician's recommendation after partial or poor response to conventional therapies. Duration of treatment was 7 to 80 weeks. Response was monitored by using a clinical global scale (n = 12), the self-rated SCL-90 scale (n = 8), and the Brief Social Phobia Scale (n = 4). Overall response rates were 58% according to the clinical global improvement scale and 50% according to the SCL-90 or the Brief Social Phobia Scale. The study concluded that Homeopathy may be useful in the treatment of depression and anxiety disorders in patients with mildly to severely symptomatic conditions.

Baker, Myers, Howden, Brooks,L.(2003) conducted a double blind, placebo-controlled, randomised clinical trial with three arms to replicate the efficacy of Argentum nitricum 12X in the reduction of anxiety. The study was conducted at Southern Cross University,
Lismore, Australia. The study was conducted on sixty-two test anxious university students. The results of this study did not replicate the Stanton study. No correlation between the reduction of test anxiety and the A. nitricum profile was demonstrated. No significant differences between treatments were demonstrated. This study demonstrated that homeopathic A. nitricum 12X does not reduce test anxiety in a general population of university students.

In a study by Bonne (2003) to evaluate the effect of homeopathic treatment in generalized anxiety disorder, forty-four patients with DSM-IV generalized anxiety disorder participated in a randomized, double-blind, placebo-controlled 10-week trial of individually tailored homeopathic remedy. Subjects' symptoms were rated before treatment and after 5 and 10 weeks of treatment, with the Hamilton Rating Scale for Anxiety (HAM-A) as main outcome measure. Additional measures of outcome included the Brief Symptom Inventory, the Psychological General Well-Being Index, the Hamilton Rating Scale for Depression, the Beck Depression Inventory, Spielberger's State-Trait Anxiety Inventory, and a Visual Analogue Scale of subjective distress. The study showed significant (p <.05) improvement in most measures,
including the HAM-A, was observed in both the active treatment and placebo groups, yet no group effect was observed. The effect of homeopathic treatment on mental symptoms of patients with generalized anxiety disorder did not differ from that of placebo. The improvement in both conditions was found to be substantial.

A randomised, double-dummy, double-blind parallel group clinical trial was conducted by Katz (2005) to assess the feasibility of a general practice-based clinical trial comparing the effectiveness of individualised homeopathic treatment vs. Fluoxetine (Prozac) vs. placebo in the treatment of major depressive episodes of moderate severity conducted in Lower Clapton Group Practice, East London. Patients were recruited through their general practitioners as they presented during a 9 month period. Recruitment target was 30 patients. Eligibility was confirmed by a consultant psychiatrist using standard criteria (DSM-IV) and instruments Hamilton Depression Scale (HAMD). Suicidal and psychotic patients were excluded; additional precautions against suicide were incorporated. There was a 1 week run-in period and patients showing spontaneous improvement were excluded. Homeopathic treatment was prescribed by a general
practitioner qualified in homeopathy, from a 'limited list' of 30 homeopathic medicines, with the help of decision support software. Patients were randomised to receive verum Fluoxetine and placebo homeopathy, or verum homeopathy and placebo Fluoxetine, or placebo homeopathy and placebo Fluoxetine. Treatment duration was 12 weeks. The outcomes were: adverse drug reactions, clinical global impression (CGI); HAMD; mini international psychiatric Interview; Pittsburgh sleep quality index; Side-effects checklist; Short Form 12; treatment credibility questionnaire; work and social disability scale. The primary outcome measures were HAMD and CGI. A recruitment calculation indicated that over 230 suitable patients would be expected to attend the practice during the recruitment phase. Thirty one patients were referred for possible inclusion in the trial by their GPs. Twenty three met the entry criteria, 11 were randomised and 6 completed the study. Of the completers, one received homeopathy, 2 placebo and 3 Fluoxetine. A trial of this design in general practice was not found feasible, because of recruitment difficulties, many of them linked to patient preference. The study did not yield any result due to recruitment difficulties.
Pilkington, Kirkwood, Rampes, Fisher, and Richardson J. (2005) conducted a comprehensive search of major biomedical databases including MEDLINE, EMBASE, CINAHL, PsycINFO and the Cochrane Library to systematically review the research evidence on the effectiveness of homeopathy for the treatment of depression and depressive disorders. Specialist complementary and alternative medicine (CAM) databases including AMED, CISCOM and Hom-Inform were also searched. Additionally, efforts were made to identify unpublished and ongoing research using relevant sources and experts in the field. Relevant research was categorised by study type and appraised according to study design. Clinical commentaries were obtained for studies reporting clinical outcomes. Only two randomised controlled trials (RCTs) were identified. One of these, a feasibility study, demonstrated problems with recruitment of patients in primary care. Several uncontrolled and observational studies reported positive results including high levels of patient satisfaction but because of the lack of a control group, it was difficult to assess the extent to which any response was due to specific effects of homeopathy. Single-case reports/studies were the most frequently encountered clinical study type. No relevant
qualitative research studies were located. Adverse effects reported appear limited to 'remedy reactions' ('aggravations') including temporary worsening of symptoms, symptom shifts and reappearance of old symptoms. These remedy reactions were generally transient but in one study, aggravation of symptoms caused withdrawal of the treatment in one patient. The study demonstrated that the evidence for the effectiveness of homeopathy in depression is limited due to lack of clinical trials of high quality.

Pilkington (2006) conducted a study to systematically analyse the clinical research evidence on homeopathy in the treatment of anxiety and anxiety disorders. A comprehensive search of major biomedical databases: MEDLINE, EMBASE, CINAHL, PsycINFO, Cochrane Library; and of specialist complementary and alternative medicine (CAM) databases: AMED, CISCOM and Hom-Inform was conducted. Efforts were made to identify unpublished and ongoing research using relevant sources and experts in the field. Relevant research was categorised by study type and appraised according to study design. Clinical commentaries were obtained for studies reporting clinical outcomes. Eight randomised controlled studies were identified. The
types of anxiety and anxiety disorders studied were test anxiety, generalised anxiety disorder and anxiety related to medical or physical conditions such as cancer or surgical procedures. Single case reports/studies were the most frequently encountered study type but other study types including uncontrolled trials/case series and surveys were also found. No relevant qualitative research was identified.

The search demonstrated that the evidence on the benefit of homeopathy in anxiety and anxiety disorders to be limited. A number of studies of homeopathy in such conditions were located but the randomised controlled trials reported contradictory results, were underpowered or provided insufficient details of methodology. Several uncontrolled and observational studies reported positive results including high levels of patient satisfaction but because of the lack of a control group, it was difficult to assess the extent to which any response is due to homeopathy. Adverse effects reported appear limited to 'remedy reactions' and included temporary worsening of symptoms and reappearance of old symptoms. Though it was difficult to draw firm conclusions on the efficacy or effectiveness of homeopathy for anxiety based on the study, surveys
suggested that homeopathy was quite frequently used by people suffering from anxiety. Pilkington suggested more studies for a definite result.

In a study to systematically review placebo-controlled randomized trials of homeopathy for psychiatric conditions Davidson et al (2011) conducted literature search using the following databases from database inception to April 2010: PubMed, CINAHL, PsycINFO, Hom-Inform, Cochrane CENTRAL, National Centre for Complementary and Alternative Medicine grantee publications database, and ClinicalTrials.gov. Gray literature was also searched using Google, Google Scholar, and the European Committee for Homeopathy, inquiries with homeopathic experts and manufacturers, and the bibliographic lists of included published studies and reviews. Overall assessments were made using the Grading of Recommendations Assessment, Development and Evaluation procedure. Identified studies were grouped into anxiety or stress, sleep or circadian rhythm complaints, premenstrual problems, attention-deficit/hyperactivity disorder, mild traumatic brain injury, and functional somatic syndromes. Efficacy was found for the functional somatic syndromes group (fibromyalgia and chronic fatigue syndrome), but not for anxiety or
stress. For other disorders, homeopathy produced mixed effects. No placebo-controlled studies of depression were identified. Meaningful safety data were lacking in the reports, but the superficial findings suggested good tolerability of homeopathy. A funnel plot in 13 studies did not support publication bias ($\chi^2(2)(1) = 1.923, P = .166$). Davidson in the study concluded that the database on studies of homeopathy and placebo in psychiatry is very limited, but results do not preclude the possibility of some benefit.

The review of the literature by Qureshi and Al-Bedah (2013) examined evidence-based data on the use of CAM in mood disorders. A search of the PubMed, Medline, Google Scholar, and Quertile databases using keywords was conducted, and relevant articles published in the English language in the peer-reviewed journals over the past two decades were retrieved. Ayurvedic and homeopathic therapies were found to have the potential to improve symptoms of depression. They concluded that, although CAM therapies were not the primary treatment of mood disorders, some level of evidence could emerge in the future showing that such treatments are effective.
Oberai et al., 2013 in a research article had reported that a six month continuous homoeopathic treatment could manage depression and related disorders.

Copploa and Montaro (2013) conducted an observational study to examine changes in indicators of anxiety with the homeopathic-complex medicine Datif-PC Coppola. Compared to baseline, the average (STAI)-state score decreased by more than 6 points, while the STAI-trait score decreased by more than 3 points. This was statistically significant ($p < 0.0001$) for both subscales. These findings were stable in subgroup analyses (gender, age and anxiety level). The study suggested that treatment of anxiety with Datif-PC, a homoeopathic complex medicine could produce notable improvements even in a short period of time. Furthermore, the observed effects were not affected by sex, age or baseline anxiety.

Grolleau (2013) explored the patient characteristics associated in naturalistic conditions with the lifetime use of homeopathic treatment for psychiatric symptoms. Lifetime use of psychotropic treatment was explored in a sample of 36,785 persons, participating in the Mental Health Survey in the General Population. Characteristics associated with
use of homeopathic treatments, associated or not with conventional psychotropic drugs, were explored using multivariate analyses. Use of homeopathic treatment for psychiatric symptoms was reported by 1.3% of persons. Younger age, female gender and high educational level were associated with use of homeopathy. Half of homeopathy users presented at least one Mini International Neuropsychiatric Interview (MINI) diagnosis, most frequently anxiety disorders. Their diagnostic profile was similar to that of persons reporting use of anxiolytics or hypnotics. In the study it was found that compared to persons with no lifetime use of psychotropic drugs, persons using homeopathy were more likely to present with a diagnosis of mood disorder or anxiety disorder. Compared to those using conventional psychotropic drugs, they presented less frequently with psychiatric disorders, with the exception of anxiety disorders. From the study Grolleau, Begaud, & Verdoux (2013) concluded that homeopathic treatment for psychiatric symptoms was used mainly to reduce anxiety symptoms in the general population.

Adler, et al., (2013) conducted a study to investigate the 1) specific effect of individualized homeopathic Q-potencies compared to placebo and 2) the effect of an extensive homeopathic case taking (case history I)
compared to a shorter, rather conventional one (case history II) in the
treatment of acute major depression (moderate episode) after six weeks.
Because of recruitment problems, the study was terminated prior to full
recruitment, and was underpowered for the preplanned confirmatory
hypothesis testing. Exploratory data analyses showed heterogeneous and
inconclusive results with large variance in the sample. Overall, no
consistent or clinically relevant results across all outcomes between
homeopathic Q-potencies versus placebo and homeopathic versus
conventional case taking were observed.

**Homoeopathy and Well being.**
The use of classic homeopathic treatment in patients with low back pain
(LBP) improves health-related QOL (HRQOL)* and reduces the need
for other healthcare services, according to a prospective, multicentre,
observational study conducted by Witt (2009). Patients with chronic
LBP (n = 129) received an average of 6.8 homeopathic prescriptions.
The severity of the diagnoses and complaints showed marked and
sustained improvements. At study end (month 24) disease severity had
decreased by 60.8% for LBP. The HRQOL improved similarly,
although with smaller effect sizes (physical component score by 0.33
and mental component score by 0.54). The use of conventional treatment and health services decreased markedly and the number of patients using LBP-related drugs was half of the number at baseline.

Review of literature has helped to form an extensive outlook on chronic low back pain and its impact on the society. Going through the literature also gave an opportunity to come across various studies on the role of homoeopathic remedies on low back pain. It also gave a bird’s eye view of the role of homoeopathic remedies on the co-morbidities like anxiety, depression and also on improving the well being in patients with back pain disorder.

The studies related to the action of homoeopathic remedies prescribed with or without placebos were found to be very few. Materia medica contains disease states and symptoms related to the low back pain mentioned irrespective of having physical signs or not. However there is not much reference on the studies related to the effect of such remedies. Homoeopathic managements are said to be controversial. There are many studies which show the positive effects of homoeopathy. However there are also metanalyses showing the results that homoeopathy is nothing better than placebo.
Research articles on the effect of homoeopathic managements on chronic low back pain are very few. Also, studies on various divisions of chronic low back pain irrespective of having or not having physical signs are still very few. Studies having prescriptions based on strict homoeopathic principles without using placebos were not obtained. Hence a study to differentiate between the homoeopathic treatment with medicines alone and those with homoeopathic medicine along with placebos can be said to be first of its sort.

Literature review was an honest effort to critically analyse and summarise findings of studies related to chronic low back pain with and without physical signs. Review also helped to identify studies of homoeopathic management with and without placebo and placebo alone. The review also tries to explain the effect of homoeopathic remedies with or without placebo and placebo alone on associated co-morbidities like anxiety and depression which may determine the chronicity of disease.