RELAXATION THEORY AND PRACTICE

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SUMMARY

This paper reviews the theoretical aspects of clinical use of relaxation and the problems inherent in its application in a hospital setting. It discusses the relative usefulness of relaxation procedures in various conditions. This includes the advantages versus the disadvantages of group practice, the use of audio cassettes, specificity of instructions and interdisciplinary aspects of patient care. Some guidelines are provided for the practice of relaxation by physiotherapists.

INTRODUCTION

We live in an anxiety provoking world. Each individual may daily face challenges, for which there may be little or no solution. Mechanization may rob pride of work and individuality. A person could become a slave to the clock, in a constant rush to keep abreast of commitments: "the inability to relax is one of the most widely spread diseases of our time and one of the most infrequently recognized" (Jones, 1953).

Anxiety often presents in a variety of bodily, behavioural and psychological ways. Every day doctors see tense patients whose anxiety may be manifested by many complaints, such as tension headaches, arthritis, ulcers, spastic colon, neurasthenia. A busy doctor may be rushed to prescribe medication having insufficient time to establish the antecedent causes of these complaints.

The use of relaxation in treatment of medical conditions is not new. In former days doctors prescribed "rest" which could be variously interpreted, but which basically included relaxation. The difference here is that "rest" involved passive use of relaxation, while modern approaches prefer a dynamic, self-regulating approach to relaxation. Jacobson (1938) attempted to place relaxation on a scientific basis and to make it a standard form of medical treatment. He has shown clinically and experimentally the usefulness of relaxation in treatment of many conditions. Generally the medical profession has been slow in adopting these approaches.

In recent times, there has been a growing interest in relaxation, as a means of dealing with tension and anxiety and of generally improving the patients' well-being. It has attracted the attention of several professions:

1. Psychiatrists are using it more frequently in dealing with conditions where the predominant component is anxiety. Those who practise hypnotherapy often adopt relaxation as a standard induction procedure.

2. Psychologists, and particularly the behavioural scientists (Wolpe, 1958 & Rachman, 1965), use relaxation as a part and as an adjunct to the systematic desensitization in the treatment of phobias, other neuroses, and behaviour disorders. Lomont & Edwards (1967) stated that "relaxation is crucial to systematic desensitization".

3. Recently the popularity of hypnosis and bio-feedback has led some general practitioners to use these methods to train their patients in relaxation. Other medical practitioners are still oriented mainly to chemotherapy.

4. Occupational therapists in the psychiatric field often use group relaxation treatment to handle a variety of disorders, such as anxiety, cardio-vascular problems, gastrointestinal problems and so forth. Although they treat mainly neuroses, some patients suffering from psychoses may occasionally be included.

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in the group. Many occupational therapists insist on detailed assessment of their patients prior to admission to a relaxation group.

5. Physiotherapists have used relaxation principles for years. They employ them in the practice of obstetrics when teaching their patients the "natural childbirth" methods. They also use relaxation as a standard form of treatment of asthma and other respiratory conditions, since it is believed to help prevent bronchial constriction. Some physiotherapists employ relaxation methods also in orthopaedic, thoracic and neurological fields, as an adjunct to other forms of treatment. This practice is not followed by other uses of physiotherapeutic techniques. That is regrettable, since, "relaxation should be the keystone of all physiotherapeutic treatment" (Jones op. cit.).

Interest in relaxation is shared by many different professions, all dealing with similar patient populations. This is of particular importance to the physiotherapist, who may be called upon in the future to offer more widespread services, involving relaxation training, to a variety of patients. As the appreciation of the use of relaxation techniques grows, so will the demand for its practitioners. To meet that demand the physiotherapist may require greater knowledge of the theories underlying the practice of relaxation, the variety of methods of its use, and of the possible reasons for its effectiveness as well as the need for selectivity in acceptance of patients into such training. This paper discusses some of these issues.

THEORETICAL CONCEPTS

While the empirical usefulness of relaxation techniques seems obvious, they are more difficult to explain conceptually. Various factors require consideration:

Relaxation and Neurmuscular Control

Jacobson (op. cit.) stated that neuromuscular patterns are an essential part of the mental and emotional activities of an individual. The energy expended in a neuromuscular activity is identical with and not a transformation of the energy of the corresponding mental and emotional activity. Jacobson argued that it is a fallacy that human ideation resides entirely in the brain and the nervous system. There are muscular tensions associated with all mental processes, such as imagery, attention, cognition and so on. When an organ is active, the muscles which control it are also active. The sensations from controlling muscles evidently play a useful part in mental processes. Without a faint tenseness neither imagery nor thought would be sustained. There is a reciprocal interaction between the tonus in skeletal muscles and in the smooth muscles of the viscera. This tonus affects the higher nervous system and therefore the tension is associated with emotion. Emotional processes cannot exist unless they are accompanied by muscular tension. Relaxation, that is, the diminution of the tension, must bring with it a diminution of emotional or mental processes. Jacobson has demonstrated, both clinically and experimentally, evidence for his theory. Further evidence to support his views comes from the behavioural scientists. Wolpe (op. cit.) showed that relaxation was an essential part of systematic desensitization, because it was antithetical to tension states. Hay and Maders (1971) demonstrated that relaxation therapy coupled with a discussion group was successful in relieving migraine headaches (presumably partly due to tension) in 69 out of 98 patients.

Jacobson's theory may be criticized:

1. He focused only on the neuro-musculo-sensory interaction, and did not consider mental relaxation, which to him was the obvious outcome of the physical relaxation. Rachman (op. cit.) opposed this and argued that therapeutically the most useful component of relaxation was the resultant "mental calmness". Mental calmness can be achieved even without muscular relaxation, by the use of pleasant imagery, or by concentration on words such as "calm, calm" or "relax, relax". Further evidence of the importance of mental relaxation comes from the studies of Yoga, Transcendental Meditation and other forms of mental self-control.

2. Lader and Wing (1966) demonstrated that there were occurrences of bursts of electromyographic activity in muscles during a relaxation session, although the subject reported himself to be quite relaxed.
3. Davison (1966) has shown that subjects who were injected with curare, a substance which produces complete relaxation of all the skeletal muscles, experienced a great deal of anxiety during this procedure.

4. Jacobson did not consider the importance of suggestion in the relaxation procedures, yet it is vitally important, as shown by studies of hypnotic analgesia (Hilgard, 1969).

Relaxation and the Placebo Effect

It is difficult to consider any form of psychological approach to patients without acknowledging the “placebo effect”. The surprising effectiveness of placebos in relief from pain is well known. Beecher (1959) showed that 35% of pain patients received relief from placebos and only 65% of pain patients received relief from morphine. McGlashan et al. (1969) proposed that hypnotic analgesia consists of two components: the non-specific placebo effects and a distortion of perception specifically induced during deep hypnosis. Some of the effectiveness of hypnosis is attributed to the placebo effect. The placebo treatment cannot be viewed in isolation, but rather as a “placebo situation” associated with childhood memories of comfort, love and caring by mother and significant others (Elton et al., 1977). A dependency on doctors, nurses and others in an “illness situation” may constitute a form of regression to childhood. The trust in the members of the “helping professions” may in itself be sufficient to allay anxiety and produce improvement (Sternbach, 1968).

Anxiety is inversely related to relaxation. Both placebos and relaxation techniques appear to relieve anxiety and pain. It is therefore assumed that placebo effects are correlated with and inherent in relaxation techniques, just as they are in other forms of therapy.

Relaxation and Hypnosis

Hypnosis has been used effectively in achieving pain relief and in the treatment of psychosomatic and neurotic disorders for hundreds of years. Barber (1963) argued that the success of hypnotic treatment was largely due to lowering of the patient’s anxiety. This was supported by Shor (1962) and others. The other important features of hypnosis are the use of suggestion and imagery, alteration of attention and dissociation. These components are also used to a degree in relaxation training. Although relaxation may be part of hypnosis, it is difficult to determine when the relaxation ends and hypnotic trance state occurs, since many of the techniques used to achieve both are similar. Some of the patients, particularly those who are good hypnotic subjects, may enter into a hypnotic trance just by the use of relaxation training. It is useful to observe certain signs of the hypnotic trance, such as the eyelid flutter, change in breathing, muscular relaxation, to determine what happens to each individual in a “relaxed” state.

In summary, when considering theories of relaxation, variables include: neuromuscular control, mental control, placebo effects and spontaneous hypnotic induction.

Techniques of Relaxation

There are many techniques which may be used to produce relaxation. The therapist should be familiar with many, but select those he/she is most comfortable with and those most appropriate to each particular patient. Not all patients are equally suited for any particular technique.

1. Jacobson’s progressive relaxation focused initially on the use of the dominant arm only. Differentiation was stressed. The patient was asked to become aware not only of the maximum and the minimum tensions, but also of all the possible range of tensions in between. For example: The patient was trained to consider a total lack of tension as 0, and the highest possible level of tension as 10. He was then asked to produce in his dominant arm a tension of level 8, then 5 and so on. Jacobson used both isotonic and isometric exercises to facilitate the learning of tension levels by the patient.

Only after the relaxation of the dominant arm was achieved, were the other parts of the body given relaxation training. Differentiation of tension levels remains a very useful relaxation technique, particularly for patients who are not aware of their own tension, since it has become a habitual state to them. It is
equally important for patients who have perpetual tension in one or more muscle groups, for example, the shoulder girdle muscles. Constant awareness of the level of tension is valuable therapeutically.

The Jacobson technique presented some problems:

(a) The treatment time varied from a minimum of 12 half-hourly treatments 3-4 times per week, followed by 1-2 hours of home practice daily, to a year or longer of daily treatments.

(b) No imagery was used, since Jacobson saw it as associated with tension of the associated muscle groups.

(c) The instructions were sometimes difficult for the patient, the use, for example, of such terms as hand flexors, hand extensors. Some knowledge of anatomy seemed needed fully to comprehend them, unless demonstration was used.

2. Farmer (1967) partially adopted Jacobson's techniques. He also commenced training with the use of the dominant arm only, and used differential relaxation. Farmer used breathing in conjunction with relaxation. When the patient breathed out, he was asked to say the word “relax”. When he breathed in, he was asked to say the word “tense”. When the dominant arm was relaxed, other parts of the body received relaxation training. Usually the patient was asked to imagine his own calm, happy, sedative scene.

This technique is useful because of its emphasis on different degrees of relaxation, the introduction of breathing and imagery.

Its problems are: the instructions given to patients are imprecise, for instance “add a small amount of tension, increase it by a little bit” without defining what a “little bit” may mean. There was no uniformity of instruction, for instance Farmer would say “relax the muscles of your shoulder”, and a few minutes later “relax your shoulder”. One instruction refers to the muscles, and the other to the joint, which is confusing to some patients. The alternation between tension and relaxation instructions is also rather taxing for some patients.

3. Burrows (1976) offered a simpler and equally effective technique, by using tension and relaxation of one limb at a time, coupled with a suggestion “it is getting limp and heavy”. Usually the procedure started with the lower limbs, to upper limbs, and then the rest of the body.

The patient was relaxed in a sitting position. This had an advantage when he was asked to relax often at home and at work. Imagery of a pleasant scene was included in the procedure. It was usually non-directive, or semi-guided. Breathing and attention to the bodily processes were stressed.

This method has various advantages over the former two. It is faster and usually more interesting for the patient and appears easy to learn. It includes instruction of more frequent, but shorter practice periods, for example a minute or two each hour, which is more manageable than one hour twice daily. It incorporates relaxation into the daily life of the individual, and allows for both definite instructions, and for individual variations.

4. Other techniques.

(a) Kleinsorge and Klumbies (1964) method has the patient repeat a combination of both physical and mental relaxation instructions, such as: “I am very much at rest. My right arm is very heavy. My left arm is very heavy. My heart is beating strong and well. My breathing is very relaxed. My head feels pleasantly cool.” This method seems to travel rapidly from part to part and from function to function. It requires a great deal of concentration by the patient, and the therapist. It appears too taxing for many of the patients requiring treatment.

(b) Boorne and Richardson (1931) provided a more colourful contribution: divide the body into a rainbow of colours, such as a red head, orange shoulders, yellow arms and chest, a green waistline, blue thighs, purple legs and feet. Instead of mentioning only the parts of the body, the therapist trains the patient to learn the “colour scheme” and then just quotes them, for instance, “concentrate on the colour of your head and notice your relaxed breathing”. This method requires longer time, it may be difficult for the colour blind and the unimaginative
patients, and may be generally over-complex. On the other hand, it may be effective with patients who are weak on anatomy, but strong on colour visualization.

5. Elton (1977) focused on the joints rather than the muscle groups, arguing that one cannot keep muscles tense when the joints they are attached to are relaxed. For example, "relax the muscles of your forearm", used in most other approaches. She argues for simplicity of instructions and orderliness. Joints are relaxed one after another in an orderly sequence. Bilateral tension and relaxation is used. The order of tension and relaxation is different to most other approaches. For instance, both upper limbs may be tensed at first, then both lower limbs, then the face. Relaxation then may proceed from face, to lower limbs and finishing with upper limbs. Variations evolved from discussion with patients who were worried about maintaining tension in a particular part of the body. Female patients were often unwilling to keep their faces tense since they worried about creating wrinkles. Some patients could not maintain tension in their toes, because of the development of cramp. Breathing was added only after the patient learned full body relaxation. The patients were asked to say the word "relaxed" on expiration. The therapist insisted on seeing their lips move as they said this. Then they were instructed to say the word "calm" on inspiration, and "relaxed" on expiration. This usually resulted in complete concentration on the task and has previously been used successfully by many other practitioners.

In summary, there are many relaxation techniques. All of them are useful for some, but not for all patients. The efficacy of the technique depends not only on the patients' suitability for it, but also on the belief in its merit by the therapist. This implies that if you are convinced that something will help the patient, it often will. Individualization is needed for the patients who do not benefit from a particular technique.

The general guidelines for any successful relaxation technique are: simplicity of instructions, that is, ones that the patient will understand; sensory component, that is, awareness of the body and its pattern of tensions; individualization of the technique as required by the patient; and the therapist's knowledge of the neurophysiology underlying the technique. Ideally, it is suggested that relaxation is most beneficial when given individually to the patient, so that all his needs are considered and a treatment programme is designed around them. If audio tapes are to be used, they should be made individually for each patient.

**RELAXATION IN GROUPS**

At present, many practitioners give training in relaxation in group situations. Group relaxation has both advantages and disadvantages.

Some of the advantages are that more patients may be treated in a limited space of time; groups provide friendship and social-network links for the patients; meeting others, and hearing of their problems may help the patient feel less isolated. Groups may be used as a catalyst for discussion, and the members of a group may provide a support system for each other. Finally, modelling is easier in groups, where the more capable members act as models for the others.

Among the disadvantages are that the space given to each patient is not always adequate in a group. There may be insufficient couches, lying on the hard floor may present problems, and so forth. A group does not always cater to the individual needs of the patient, it does not allow for the individual variations—it is aimed at the "mythical average"; homogeneity of a group is difficult to attain. Also a therapist handling several group members may find it difficult to observe deleterious effects of the programme on one of the participants. The more severely disturbed the patient, the more need for individual attention.

All the above disadvantages are augmented if audio-cassettes are used. Lately there has been a growing interest in the use of these cassettes. It was believed that it saved the therapist's time, provided uniform instructions and permitted training of patients by semi-skilled personnel. This has led in some instances to their inappropriate use. If tapes are to be used in a group therapy of relax-
tation, certain guidelines need to be observed: Initial detailed patient screening is essential. This may include an interview, a careful taking of history, and the use of psychological questionnaires. Other important aspects to be considered are the degree of motivation for change by the individual, the ability to persevere, to understand the instructions. Imagination greatly adds to successful therapy.

The first session should be individual, so that the patient may assess whether he can benefit from that particular cassette. Patient responses are also assessed by the therapist. The programme of training should be discussed with each individual, to ensure cooperation, a contractual arrangement and an integrated treatment regimen, and an immediate follow-up after group session should assess the effect of the group practice on each individual.

**DISCUSSION AND SUMMARY**

Increased interest in the use of relaxation techniques led to the re-assessment of the possible role of the physiotherapist applying these techniques as a member of an interdisciplinary team.

The therapist has a right to determine whether a particular patient is suited for a particular group relaxation programme. Homogeneity of a group is desirable for maximal benefit of this type of training. One unsuitable patient may disrupt the whole dynamics of a group. Some patients do not benefit from group relaxation and alternative therapies may be needed.

The ideal size of a group is 6-8 patients. Larger groups are usually not so effective. Detailed prior history taking is essential. Frequent re-assessments should follow.

Discussion with other members of the team are helpful. Occasionally the reason for referral of a patient to a group relaxation therapy includes a need to make the patient less tense and easier to manage in therapy. Another reason may be “to give the patient something to do”. These reasons may be inappropriate and the situation should be discussed with the referring doctor.

These suggestions are guidelines for an optimum method of carrying out relaxation therapy. Some hospitals are understaffed, and such shortages are frequently compensated for by less individual attention of patients by physiotherapists and others in the helping professions. Many a physiotherapist may feel guilty about the non-acceptance of a patient and may prefer to give a group treatment rather than no treatment at all. This is not the best answer to this problem.

**REFERENCES**


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