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Treatment of Tinnitus and Tinnitus Sufferers in Norway: What Is Our Present Standing? Where Do We Go from Here?

Steinar Birkeland

Norwegian Tinnitus Sufferers Research Project and the Norwegian Association of Hard of Hearing People, Oslo, Norway

During the last 3 years, The Norwegian Association of Hard of Hearing People (HLF) has tried systematically to put the needs of tinnitus sufferers on the map. A primary goal is the strengthening of tinnitus treatment. Additional goals are to ensure vocational reemployment, to release welfare benefits, and the like. First we briefly summarize HLF's present achievements.

During this relatively brief period, a successful political lobbying effort has been aimed at the authorities responsible for granting funds. HLF has served also as an initiator of public relations and an instrument for the distribution of information. HLF has started help-to-self-help groups and has carried out worskhops and seminars for the average tinnitus sufferer. HLF has been responsible also for the development of a tinnitus contact network in all of Norway's counties.

Today, HLF notes a significant mass media interest in tinnitus. Tinnitus is virtually fashionable. The demand for information regarding tinnitus promotes HLF to the public. Health care professionals also have become more aware of tinnitus. Finally, tinnitus sufferers have made their mark within the Association through the efforts of HLF's tinnitus committee.

All this tinnitus-related attention causes HLF's secretariat to experience an ever-increasing influx of tinnitus sufferers and professionals. The reason for this article is the many inquiries based on a rumor of new and effective types of tinnitus treatment abroad. Is this correct?

TREATMENT ABROAD

As to the question of the existence of new and effective treatments of tinnitus, the answer can be both yes and no. As often is the case with rumors, this truth comes with modifications.

Reprint requests: Steinar Birkeland, The Norwegian Association of Hard of Hearing People, Lilleakerveien 31 A–0283 Oslo, Norway. Telephone: 22 51 04 00; Fax: 22 51 04 01.

Nonetheless, the increase of interest unveils a significant need of information regarding what actually is happening on an international basis. Apparently considerable progress has been achieved abroad, especially concerning the treatment of long-term chronic tinnitus. To elucidate the challenges facing our own mode of treatment, we focus on Norwegian conditions.

THREE PROBLEMS

Not only tinnitus sufferers but a number of health care professionals state that treatment of tinnitus in Norway is unsatisfactory. The professionals are frustrated, and the sufferers despair. Subsequently the sufferers often have a discouraging meeting with employment exchange, national health insurance, and other authorities.

The fact that Norwegian treatment has its weaknesses is assurance that conditions abroad are any better. Foreign tinnitus sufferers in reality also are victims of a lack of resourses and qualified information within the health sector of their own countries.

In other words, Norwegian tinnitus patients are not alone in rarely meeting a doctor who gives a correct diagnosis—tinnitus aurium—on the first consultation. The same uncertainty surrounds the chances of being offered qualified information, emergency assistance, and forwarding to a specialist.

A wide diversity in opinion concerns the will and ability to attempt to alter this situation. Before going into detail on foreign conditions, we give a pinpointed description of what is entailed in the three aforementioned problems: *lack of information, lack of emergency assistance, and lack of referral.* This description is based on the average Norwegian tinnitus sufferer's point of view.

Breech of Information

Even on a specialist's level, many tinnitus sufferers approaching the mode of treatment are not imparted more information than the following: Tinnitus is a benign

and chronic condition, so one just has to learn to live with it. Rarely, if ever, is information given about how coping skills can be taught.

Hence, many are left virtually to their own anxiety and feelings of despair. Of course, some sufferers manage to cope on their own. Then again, quite a number of others forfeit their social network by losing their jobs, family, and friends.

An example of what lack of information leads to is the many tinnitus nomads wandering in the private health and therapy market. Their journeys are not only expensive and more than often futile but suspend the patient between hope and despair, which can increase tinnitus rather than lessen it.

Lack of Emergency Help

Persons with tinnitus are checked increasingly for tumours and obvious triggering factors of tinnitus. Tinnitus also is increasingly understood as a possible side effect of medication (i.e. from use of drugs containing acetyl salisated compounds). Such knowledge is useful but does not mean that the help offered in the acute phase is satisfactory. At least two other problem areas remain.

First, many physicians are not familiar with relief measures that revitalize coclear haircells in the presence of recent damage to the inner ear. Pressure chamber treatment and blood-thinning medication over a short period have documented a positive long-term effect on acute tinnitus.

Second, very few physicians have sufficient knowledge (not to mention sufficient time) to meet the tinnitus sufferer as an individual going through a life crisis. The process of handling feelings of depression or unrest in many cases is rendered unneccessarily difficult, resulting in the increased risk of an aggravated final condition in relationship to both tinnitus and coping skills.

Poor Referral Routines

The third problem area is the medical profession's poor ability to guide tinnitus sufferers to the correct specialists. Repeatedly, patients are not sent on to physiotherapists, neurologists, or psychologists. This occurs despite the fact that patients report serious psychosomatic dysfunctions, such as sleeping problems, concentration difficulties, unrest, muscular tension, irritability, and depression. Added to these problems is a long waiting-list period, especially in gaining access to psychologists.

Another frequent mistake is the referral of patients to ear, nose, and throat ENT specialists who have little or no specific knowledge of tinnitus and lack clinical experience with tinnitus sufferers. Parenthetically, the public hearing clinics have very few physicians who deal with hearing as their specialty (the so-called audiologists). These difficulties are enhanced by the fact that the public hearing clinics are filled beyond capacity, resulting in waiting lists of up to several months. It does not matter how skilled the professionals are if the patients are not taken into consultation quickly enough. Such backlogs also delay referrals to other high-level capacities. As if this were not bad enough, the high-pressure work situation strongly limits the capacity to engage in long-term treatment or rehabilitation.

In practice, lack of referral and long delays in receiving expert help increase the risk that the individual is trapped in a vicious circle consisting of tinnitus, physical ailments, and psychosocial problems, all of which aggravate each other.

SATISFYING PATIENT NEEDS

The three foregoing problems are a composite of negative experiences that tinnitus patients have experienced as the result of the mode of treatment here in Norway.

This presentation can be viewed as heavy-handed. Surely, many professionals do all they can do (and a bit more) within the confines of an economic, organizational, and limited competence framework. However my intention for this dismal report is only that it serve as a means of emphasizing the area of the greatest need for change. Here the consumers—who know how the shoe fits—have interests corresponding with those of the professionals.

The consumer studies underlying this account of the situation bring forth disturbing indications that the status for tinnitus sufferers within the Norwegian health sector are particularly tragic. Even severely needy tinnitus sufferers risk failing to obtain vital information, emergency assistance, and referral.

The medical situation for tinnitus sufferers is undoubtably intolerable as long as the social health services are unable to filter out those with tinnitus and to initiate remedial action. Such response is needed to prevent tinnitus sufferers from ending up as chronic cases with unnecessarily severe tinnitus and reduced coping ability. Here we can profit from looking abroad.

MEDICAL TREATMENT OF ACUTE TINNITUS

The last year's foreign medical research has produced a considerable amount of knowledge of damages of the outer ear and middle ear that can trigger tinnitus. Well-known trigger causes—earwax accumulation, infections, tumors, perforated eardrums and stapes—are

most common. In spite of the fact that substantial clinical rehabilitation still is lacking, current techniques render possible the reduction and (in some cases) the repair of such damages.

The efforts put forth in this field undoubtably have made a difference in the medical profession's ability to apply scientifically justifiable principles to acute medical tinnitus treatment. The clinical value still is limited, owing to at least three reasons.

First, the problem encompasses more than the releasing factors in the outer or middle ear. Tinnitus also can be related to or enhanced by medication, neck-head injuries jaw tension, and mental disturbances. Additionally, tinnitus can be attributed to age-related hearing loss or acute nose damage of the inner ear. If such is the case, the previously mentioned pressure chamber treatment or blood-thinning medication is a possible solution.

Second, only a few of those who do require assistance are offered treatment to cure or reduce tinnitus-triggering/enhancing damages.

Third, in spite of the fact that some obtain such assistance, the results are unneccessarily poor, owing to the fact that treatment is not given in the acute phase of the illness. Rapid treatment is the "alpha and omega" for the outcome. Tinnitus rarely evolves as a typical somatic illness in which removal of the triggering factors automatically disposes of the symptoms. On the contrary, tinnitus has a characteristic ability to follow the central nervous system and infiltrate to the cerebral membrane, more precisely in the hearing center of the brain, independent of whether the triggering causes have been repaired.

This peculiar phenomenon always has puzzled tinnitus researchers greatly. Over the last two decades, a number of imaginative medical theories have proposed to explain how chronic tinnitus is triggered. However, so far the launched explanations have proved to have limited scientific validity and little or no clinical value.

Today's medical tinnitus research is characterized by its extensive specialization. The various projects take part in a collective hunt for the triggering factors of chronic tinnitus. The ambition is to solve the tinnitus mystery. Such projects are financed partially or entirely by the pharmaceutical industry, which sees a tremendous market for the "tinnitus pill." This research, however, presently has come to a lull, though the medical researchers involved still patiently tread water with more or less hope for a future breakthrough.

TREATMENT OF CHRONIC TINNITUS

Even if medical research has not managed to isolate one single triggering factor of chronic tinnitus, it does not mean that this group of patients has been forgotten. During the last decade, significant progress has been obtained within psychologically and neurologically related tinnitus research.

However, many are skeptical regarding professional psychological treatment of chronic tinnitus, as tinnitus persists. If this is so, the skeptics overlook the potential for improving tinnitus sufferer's life quality. Hence, we would argue that if individual's undergo professional psychological treatment combined with new audiological technology they might not have to endure their tinnitus for the remainder of their lives.

Psychological Emergency Assistance for Acute Tinnitus

Until recently, psychologists' interest in tinnitus has been limited to the acute phase. In Sweden (at least in Goethenburg and Stockholm) almost immediate psychosocial information to the patient and family counseling is practically an obligation. Even if this service does not always involve a clinical psychologist, the patient always is received by qualified health personnel clinically experienced with tinnitus sufferers.

Patients are evaluated with psychological treatment in mind. Selection of such treatment presents a tremendous clinical challenge to make the tinnitus sufferer capable of meeting and handling the loss reactions that surface during an individual's life crises.

Psychologically speaking, the typical crisis of life evolves as follows: shock, reaction, adaptation, reconciliation, and reorientation. In reality however, many patients pause and are in need of the assistance of a psychologist to continue the process. Therefore, it is essential that the patient gradually becomes independent of psychological defense mechanisms. Examples of such mechanisms are intellectualization, denial, reaction formation, projection, displacement, and rationalization.

In addition, the patient receives help to tackle as many of the accompanying problems as possible. The therapist's knowledge of this is connected naturally to the various clinical experiences with tinnitus sufferers. In any case, it is mandatory that the therapist be acquainted with research on tinnitus sufferers' everyday life problems.

Psychological Treatment

Psychological therapy also has proved effective for patients with chronic tinnitus. Then the focus is not on the life crisis but rather on a strong, long-term psychosomatic imbalance. However, general psychology is also the basis for this treatment. This stems from the

fact that individuals with chronic tinnitus often suffer from depressions and anxiety conditions.

Over a long period, psychologists have taken the clinical consequences of the differences between the two conditions. They have developed customized types of therapy and clinical techniques. However, in recent years, documentation suggests that anxiety and depression often occur concurrently and that patients often oscillate between these two conditions.

Fortunately, this is taken into consideration in today's psychological treatment as offered in Germany, United Kingdom, and the United States. To be more specific, psychosomatically orientated clinical techniques play an ever-important role.

Psychosomatic Treatment

Until the mid-1980s, treatment of chronic tinnitus was dominated by so-called behavioral therapy. In plain language, this program provides physical activity and the learning of relaxation techniques. In addition, patients with severe jaw tension, high blood pressure, and similar problems went through biofeedback training. This training entailed intensive use of a portable meter. The meter set off an alarm signaling unwanted perspiration, shaking, or heart beat frequency. Thereby, patients could train to control their own level of stress.

As mentioned, patients with chronic tinnitus often oscillate between anxiety and depression. Therefore, behavioral therapy was found to have limited value in transference from the clinic to everyday life. Daily life consists of coincidences and demands for flexibility, not just program and routine. Thus, toward the beginning of the 1990s, many psychologists working with tinnitus sufferers began to look in the direction of cognitive therapy. This form of dialogue-based therapy is intended to correct thought and understanding malfunctions. Techniques of treatment are basic. More specifically, the patient is to become aware of negative thoughts because they create destructive feelings and attitudes, which again affect actions in an unhealthy manner. Subsequently, patients train in making the most constructive choices pertaining to hopes and expectations the basis for stressful situations, including tinnitus.

Even if cognitive therapy can contribute to improving everyday life, the following problem remains: Many chronic tinnitus sufferers oscillate between anxiety and depression. Hence, many psychological specialists today choose psychosomatic treatment.

This treatment can be obtained by combining the two previously mentioned types of treatment. The official term for this combination is nothing less than *cognitive behavioral therapy.* This form is the most common type of psychosomatic treatment for dealing with chronic tinnitus. Some competing clinical variations exist. The essence lies in the following combination: In addition to offering physical activity and relaxation, it allows the patient to map and improve thoughts, attitudes, and feelings connected to everyday life and tinnitus.

From Moralizing to Treatment

Scientific research in crisis psychology has shown that humans in stressful situations make their own choices, by adjustment, paralysis, or flight. In accordance, psychosomatic therapy of chronic tinnitus requires the patient to train coping with stress and to build up a certain stamina.

For the same reasons, many here in Norway consider psychological treatment of chronic tinnitus as a matter of obtaining techniques for enduring in spite of tinnitus. This point of view coincides interestingly enough with cultural values, such as sobriety ("work before play") and acting noble ("grin and bear it"), which are deeply rooted in Norwegian society.

Psychosomatic therapy undoubtedly can alleviate the expectations of one's surroundings by the ever-returning admonishments of "Pull yourself together" or "Learn to take the punches." Many Norwegians, tinnitus sufferers included, have made fulfilling this type of moralizing as a goal in life.

The ability to handle personally oppressive situations can clearly have significance. From a clinical

Table 1. Psychological Treatment Alternatives for Tinnitus Patients

Type of Problem	Type of Therapy	Type of Clinical Technique
Depression	Behavioral therapy	Relaxation, biofeedback, and exercise to reduce tension and increase activity level
Anxiety	Cognitive therapy	Individual and group-based consultations and dialog aiming at greater awareness on how thoughts create an impact on feelings and actions
Anxiety and depression	Psychosomatic treatment	Mapping and solving practical problems and altering individuals' expectations in stressful situations

point of view, in treating chronic tinnitus, this is only partially true.

Long-term adaptation to stress requires not only practical measures to make everyday life more bearable. Over a period, mental strain leads to physical stress. This is most likely the type of psychosomatic imbalance that entails oscillating between anxiety and depressive conditions. To avoid this situation, many tinnitus sufferers need reprogramming from negative to positive expectations connected with stressful situations, including tinnitus. This goes beyond mere adaptation techniques.

Interestingly enough, clinical research in this area shows that chronic tinnitus sufferers who develop a positive attitude to their tinnitus become capable of diverting their attention from the problem and getting on with their lives. It is, then, not a matter of living *in spite of* tinnitus but rather of living *with* tinnitus.

Passive Adaptation

Professionally speaking, the ability to ignore tinnitus is called *adaptation*. This technique means that the nervous system manages, over time, autonomously or passively to suppress superfluous sensory impulses.

Neurologically speaking, the hearing center then becomes reorganized in such a manner that selected sensory impulses are given less priority, as in the case of subjective oversensitivity for high-pitched sounds (hyperacusis). (Hyperacusis must not be confused with recruitment, which is a physiologically caused fortification of unwanted noise.) This is the opposite of passive adaptation. In such cases, specialists speak of passive sensitivity tolerance. They are, however, two sides of the same story: individuals' unique ability to elevate themselves from creatures of instinct to intelligent beings.

In situations wherein passive adaptation is required, it occurs without greater difficulties. However, great individual differences exist. The result can vary from total passive adaptation to high increases in the level of sensitivity.

Both possibilities are known from the tinnitus research, which has concluded that no clear positive connection exists between tinnitus volume and the degree of psychosomatic problems. On the contrary, some tinnitus sufferers with high tinnitus volume have few or no such difficulties. Yet, a great number of tinnitus sufferers with low-volume tinnitus develop extensive psychosomatic problems. The first case deals with successful passive adaptation; the latter is an unwanted increase in sensitivity.

Active Habituation

Just a few years ago, no hope was available for tinnitus sufferers if they did not respond to passive adaptation. Today, foreign methods of treatment attempt to reorganize the hearing center of the brain. The psychological term for this active type of adjustment is *habituation*.

More to the point, UK and US clinical research shows that tinnitus sufferers who do not respond to passive adaptation can achieve habituation through psychosomatically orientated treatment. In such cases, cognitive behavioral therapy often is used. This therapy is increasingly combined with the latest audiological technology. Through the use of these techniques, tinnitus sufferers are able to think and act in a constructive manner.

The traditional goal is to reduce psychosomatic dysfunctions. This goal still has a high precedence, but increased knowledge of habituation has necessitated an expansion in the psychological field in treating chronic tinnitus. Hearing is connected closely not only to our thoughts but to our most intimate emotions and to the instinct of danger. Undoubtably, a great need for psychosomatic treatment exists, especially in relation to tinnitus sufferers with widely increased passive sensitivity.

New audiological technology includes a so-called noise generator, which in appearance resembles a portable masker. In contrast to the masker, which camouflages tinnitus areas of frequencies and level of volume, the noise generator produces a broad-band noise with a volume considerably lower than that of the individual's tinnitus. The masker gives a feeling of noise control, whereas a noise generator is part of a treatment. Use of a noise generator at least 6 hours a day over a 2-year period forces the brain's hearing center to ignore tinnitus. This gives adaptation a new chance to do its work.

One might mention that in cases of hyperacusis, psychosomatic treatment is fortified by the use of a broad-band noise generator, which starts with a very low volume that then is increased gradually.

NORWEGIAN IMPORT

Is it, then, possible to import the principle of a combined psychosomatic treatment and noise generator to Norway? At first glance, this practice may seem to be too expensive. Nonetheless, this type of treatment is offered in much of the British health system, where it goes under the title of *tinnitus retraining therapy*. Similarly, a number of private US clinics offer such treatment, and Germany is in the process of following.

Sweden is the closest we get to such treatment in the Nordic countries. Today's Swedish psychological treatment of chronic tinnitus aims at achieving active habituation. Simultaneously, an ever-increasing number of patients are offered the use of noise generators.

Norway is on the threshold of a trial use of noise generators. This development calls for a warning against isolated use of the new audiological technology. Un-

doubtably, better results are gained from combining the noise generator with psychosomatic treatment. Reprogramming of the cerebral membrane requires professional psychological help. Such support also increases the motivation to systematically use the noise generator.

In conclusion, we also warn against limiting research to chronic tinnitus. As explained, acute tinnitus sufferers lack information, medical treatment, and psychological crisis assistance. Hence, advances on several fronts simultaneously are essential.

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