

Music as Medicine

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Music Programme for Intensive Care and Recovery Patients

Background

Several scientific studies from the United States, among others, have shown that music can lower the stress level judged by pulse and blood pressure in heart patients. This is expected also to be the case with critically ill patients in intensive care units and patients in recovery wards after operations. A constant humming from the respirator, alarms from monitoring equipment, which signals danger; the sound of people being busy and strange voices are some of the anxiety creating sounds, which critically ill patients are exposed to. This is shown by sound recordings, when a microphone was placed on a patient's pillow next to the ear.

The auditory sense is active under an anaesthetic in the intensive care unit and under full anaesthesia.

One of the reasons psychoses occur in intensive care patients is that in their senseless state of mind the patients lose the feeling of the daily rhythms.

It is our hypothesis that the music programme lowers the stress level in the individual patient, normalises the pulse and blood pressure, drowns the disturbing alarms and other technical, noisy equipment in the ward and makes the patient mobilise good and necessary feelings in the healing process. Other hospital doctors and psychologists follow this pioneering project with interest. The entire project is planned as a scientific study of whether the music and the sounds have the desired effect.

Music

The idea is that ill people should recover in a hospital, but all the noise and disturbance, which is particularly experienced in an intensive care unit, is contributing to making the ill even more ill. Consequently, there are particular requirements as to psychology and experience to a music programme designed for patients.

The first sound, we as human beings know of and are soothed by, is our mother's heart rhythm, and the music has been composed with a similarly slow rhythm. Therefore, the music project has taken at its starting point what everyone knows: the reassuring effect of the heartbeat 60 times a minute and the breathing 15 times a minute. Any mother and father knows from experience that if their baby is anxious, rocking the child soothingly with the child's ear close to the adult's heart has a good effect. For 9 months the unborn baby has become used to this rhythm, and it lies deep in everyone. That is why these slow rhythms are so common in the music. However, there have been other considerations regarding the choice of music and sound elements. From the first experiences the music concept has changed considerably; now fewer passages from classical music are being used, as it became too much like a request programme, and because most classical music has too many contrasts in the levels. It quickly turned out that the music composed especially for the programme was the one best suited for establishing the atmosphere, being a combination of experi-

ence and calm, which was the starting point of the idea for the music programme.

A specially composed music programme is being produced consisting of three components: new composed music, edited nature sound moods and selected music passages of a particular quality. These three components are balanced in relation to each other with the particular quality that rhythms represented in the body's functions such as pulse and breathing frequency are meant to stimulate and mobilise feelings in the otherwise senseless patient. As the idea was that the music should reflect the daily rhythm, approx. 14 hours of music must be edited for each day. We start about 8 in the morning with sounds from the early morning, for instance in an awakening wood, and after this time we change between activating and calming sequences during the day.

In the whole programme are used archetypal nature sounds, which we all connect with being alive, and the idea is to create a universe in which the listener can create his/her own images, but the backbone of the music programme is newly composed and picture-creating music, which melts into the large expanse of nature sounds.

The starting point of the music is that it can be listened to and enjoyed by anybody irrespective of musical background and taste by bridging several worlds of sound by using both acoustic and electronic instruments.

The auditory sense is fully active under an anaesthetic in an intensive care unit and under full anaesthesia.

Intensive care patients typically stay in the ward a little more than a week. Therefore the aim is to compose music with a special theme for each of the weekdays to create the experience of a weekly sequence.

The deeper meaning is that the listening patients can experience themselves on a nature trip and to the limit between nature and human beings. Archetypal, original sounds from water, animals and other human beings will be a kind of lifeline to the patients and consequently remind them that they are alive.

Purpose

The purpose of the project is to study whether the music programme, played from ceiling loudspeakers or headsets, has a positive effect on physiological and psychological factors such as stress and anxiety and whether, if possible, via the music, it can recreate the patients' time, space and reality conception and consequently reduce the risk of psychoses in intensive care patients. The project includes both intensive care patients and recovery patients after full anaesthesia or

local anaesthesia. Effect-variables consist of attitude gauging and objective measurements such as pulse and blood pressure. Other effects are the effect on the daily rhythm and the pain threshold.

The attitude gaugings are being carried out on staff and relations as well as on the patients. The effect of music periods and music-free periods of three days duration is compared. Both positive and negative effects are registered.

Target Group

Intensive care patients, who are in a respirator, get sleeping medicine to be able to accept the tube, which is pushed into their respiratory passages, and approx. 40 per cent of all intensive care patients are in a respirator. Sometimes we have to administer more sleeping medicine, for instance if the patient becomes anxious and starts to sabotage the respirator. We therefore hope that the calming effect of the music will reduce the patients' need for sleeping medicine.

It is a well-known fact that people deprived of their senses, who live without external influence and with a suspended daily rhythm, can develop psychoses. Our patients are also in risk of developing these psychoses, lying drugged as they are with a machine to take care of something as important as their breathing. By stimulating the patients with music, which recreates the daily rhythm and stimulates the patient's feelings, we hope to limit the phenomenon.

The project in the intensive care unit of the National Hospital in Copenhagen is taking place in a co-operation with a ward for recovery patients at Aalborg Hospital. As recovery patients are drugged for no more than 5 hours after an operation, a shorter but similar music sequence has been produced, from which experience is also gathered.

On a national basis there are approx. 300,000 recovery patients and 2,000 intensive care patients each year.

With the project's national extension the patient potential will become large, and the result measuring in the year 2000 will consequently be very extensive.

Results

The project was originally planned to include one week's music programme, but the present purpose is 4 days' programme. Already now there are extensive results of a systematic study of the music's effect on patients, relations and staff on the basis of interviews and other result measuring methods.

Project nurses in two wards have gathered the results of the attitude gaugings, and the study so far takes its starting point in the two completed "music days". A qualitative adjustment was made after a trial period on the basis of an attitude study with the staff and relations. It is a positive side-effect that the music also lowers the stress level with the staff and relations, be-

Newly composed music in the loudspeakers in the intensive care units and at recovery wards at the National Hospital in Copenhagen and at Aalborg Hospital is expected to lower anxiety and stress in patients, relations and staff.

cause it indirectly affects the patient. The staff reached a "mood" synchronisation with the patients. With this was obtained something very important, namely that the sound environment around the patient changed, and that speech and communication were mellowed.

It has been a difficulty that the interviewed patients discharged from the ward could only remember little from the intensive care period and consequently, very little of the music. On the long view measuring of changes in stress level judged by the patient's pulse and blood pressure response to the music is planned.

The patients' overall conception of the stay in the recovery ward was significantly more positive during music periods compared to a music free stay at the recovery ward. The patients stated that the music made them more calm (37 per cent) compared to calm in a music free

environment (12 per cent). If no music had been played to the patients in the recovery ward, 57 per cent had a negative expectation to music. If, however, music had been played beforehand, only 10 per cent had negative remarks about the music.

The provisional conclusion is that sound environment in the form, which the project has designed, played a decisive role in the patients' statements of wellbeing and calm.

Status

Since 1999 the National Hospital in Copenhagen and Aalborg Hospital have both used the music programme in the intensive care units as well as the recovery wards and at each case have gathered result measurements, which during the year 2000 will be collected into a joint database. This database will be established in connection with the building of a new West Danish organisation, which has just been started and which includes hospitals in Aalborg, Århus and Odense.

The production of the third full-day music programme is well under way and the recording is expected to be completed in May/June 2000.

The Further Process

The project, which was initiated at the turn of the year 1998/1999, is expected to finish in

2001. Until then a current systematic data collection will take place by means of forms already made. The database with the complete results from the national extension of the project will form the basis of a very extensive total final report for the entire project around the turn of the year 2000/2001.

When the results have been thoroughly analysed, they will be released on the Internet and also published in relevant scientific literature.

At the National Hospital in Copenhagen and in Aalborg Hospital the patients can now listen to the roaring sea, bird song and beautiful soundboards from oboe, cello and many other instruments. The project group from the National Hospital in Copenhagen and the West Danish organisation hope that all intensive care unit and recovery patients in the country on the long view will benefit from the music therapy. First and foremost the scientific studies must naturally be carried out and further scrutinised for the next couple of years, but the project group have great expectations to the results and maintains:

Even though we cannot yet document the positive effect of the music on the patient's recovery, common sense tells us that a more relaxed and comfortable patient have a stronger vitality.

