Chapter 10

Analytical Observations Between Subjects’ Medications Movement and Medication Scores Correlation Based on Their Gender and Age Using GSR Biofeedback: Intelligent Application in Healthcare

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ABSTRACT

Increasing stress levels in people is creating higher tension levels that ultimately result in chronic headaches. To get the best result, the subjects are divided into two groups. One group will be introduced under EMG, and the other will be handled under GSR. The change in the behaviour of subject (i.e., the change in the stress level) is measured at the intervals of one month, three months, six months, and twelve months. The main aim of the research is to study the effects of tension type headache using bio-

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feedback therapies on various modes such as audio modes, visual modes, and audio-visual modes. The groups were randomly allocated for galvanic skin resistance (GSR) therapies, and the other one was control group (the group that was not under any type of allopathic or other medications). Except for the control group, the groups were treated in a session for 20 minutes in isolated chambers. The results were recorded over a specific period of time.

INTRODUCTION

Biofeedback

In Introduction, we shall discuss different medication domains in which a subject can lie, social annals of TTH as per gender and age and some process of biofeedback which are used to control TTH and important basic technical terminology used for research work like Bigdata, IoT, TTH, Machine Vision, Biofeedback etc.

The main three professional organizations of biofeedback, (AAPB), (BCIA), and (ISNR) come to a common definition for biofeedback as “the process which enables the individual for learning to change the routine and method of physiological activities so that the health of individual could get improve” (Fumal & Scohnen, 2008).

- **Electromyograph**: Earlier the device for biofeedback was developed by Dr.Harry Garlan and Dr.Roger Melenin, 1971. The muscle whistler shown in this with EMG electrode.
- **Feedback Thermometer**: This device detects the skin temperature and is usually attached to a finger and is measured in degree Celsius. The hand-warming and hand-cooling signs are marked by another mechanism.
- **Electrodermograph**: In this process this device detectsskin electrical activities indirectly and directly by the electrode which is placed above the hand. This device detects all the electrical sensation from the brain when it is placed over the scalp item which lies above the human cortex.
- **Photoplethysmograph**: In this process the device measure the blood flow through a particular body part when an infrared light is passes through the body part and the intensity of light transmit through the tissue.
- **Electrocardiogram**: In this process the electrodes are placed over torso, wrist or legs and records the electrical sensation of heart and records the multiple beat differences.
- **Pneumograph**: This device uses a gauge which have a stretchable sensor band which is placed across above the stomach,abdomen and measure the respiration rate.
- **Capnometer**: This system record the information by using as infrared detector which measure the pressure partially when carbon dioxide is excreted through the latex tube.
- **Rheoencephalograph**: This is also known as HEG biofeedback, and it is clear from the name that this records the difference in the color produce by light which is transmitted back by hair scalp based on oxygenated and un oxygenated blood in the brain
- **Pressure**: It can be measured when the patient perform any exercise while continuously resting along an air-filled cushion.