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The effects of music on human blood pressure

[1] Joyanta Sarkar, [2] Utpal Biswas

[1] Department of Instrumental Music, Rabindra Bharati University, West Bengal, India

[2] Assistant Professor, Department of Music, Tripura University, Tripura, India

Abstract
Music is both a vital and pervasive piece of the human experience. It is a basic part of human life. It is valuable to live with joy and wellbeing. It is exceptionally fascinating to break down different exploration studies identified with music and Human Body. On the basis of this research the effect of music on Human Blood Pressure can be established. The purpose of this experiment was to determine how two different tempos of music (Slow tempo music and Fast tempo music) would affect Human blood pressure.

Keywords: Classical Music, Soft Rock Music, Sleep, Childcare Children, Naptime.

Introduction

Blood pressure is the pressure of blood pushing against the artery walls. Systolic pressure is the pressure while the heart is pushing blood as the ventricle contracts. Diastolic pressure is the amount of pressure while the heart is resting while the heart is resting. The systolic pressure is written above the diastolic pressure: 80/45. An infant's blood pressure is about 80/45. A 30-year-old's blood pressure is about 120/80. A 40 year olds blood pressure is 140/85. As we get older our blood pressure usually gets higher [2].

The adult heart pumps three quarts per minute when resting and 24 quarts when we are exercising. Our oxygenated blood travels through arteries while our non-oxygenated blood travels through veins. Our blood has a substance called hemoglobin, which helps relax our blood vessel walls. The blood travels through veins and arteries to supply blood to every part of the body. Hemoglobin is the substance, which makes the blood red [4]. The hemoglobin carries nitric oxide, which makes sure the blood vessel walls do not expand. It does this by regulating the amount of nitric oxide the vessel walls are exposed to. Hemoglobin is the substance, which turns the blood red. The hemoglobin carries a substance, which makes sure the vessel walls do not expand. Without this substance the vessel walls will expand to an unhealthy level. The hemoglobin also makes sure that the vessels are only exposed to a certain amount of nitric oxide or the vessel walls may not be healthy.
The pressure is taken with a tool called a sphygmomanometer which has a gage connected it. The cuff is wrapped around the upper arm as the little round ball is squeezed to apply pressure. Then a stethoscope is used to listen to the artery. They listen for the sound of your blood hitting the artery walls. The cuff itself squeezes to cut off our circulation.
When we here thump we look at the meter (which snaps on to the cuff)
In the circulatory system the heart is the most important. The heart pumps out the oxygenated blood through arteries. The veins carry the un-oxygenated blood back to the heart. The heart is split in half with half pumping non-oxygenated blood to the lungs and half-pumping oxygenated blood to the brain and body. The heart pumps 27 quarts a minute in an adult body. The blood travels through arteries and vessels to supply blood to every part if the body. If the blood supply is cut of then the area cut of will start turning different colors. The blood carries oxygen to the different cells of the body and without the oxygen the cell dies. That is why the skin turns a different color.
Music is a group of sounds put together to form a song [1]. The sounds express a person, feelings, behavior, beliefs, life or experience. Music has been around for many years. It has been used for many generations for musical entertainment or religion. In the olden days music was played for royalty but now it is used for all people. Music can affect people's moods and behaviors. Music can affect a person's mood or felling.
The systolic and the diastolic pressure are both ways of measuring blood pressure accuracy. The systolic pressure is written on top of the diastolic pressure [3].

Blood pressure readings vary for as we get older our blood pressure gets higher. Blood pressure is always changing as our

activity level and emotions change. The heart pumps 27 quarts a minute in the adult body [5]. The blood travels through veins and arteries to supply blood to every part of the body. Music can affect a person's mood or felling.

Hypothesis

Our hypothesis is that the fast tempo music will raise a boy's blood pressure. We think the slow tempo music will lower their blood pressure. We base our hypothesis on our observations that people are affected by the tempo of music. Bouncy music has a tendency to make people more active, and soft has a tendency to calm people.

Experiment Design

The constants in this study were:

- The amount of time music is played
- Gender of subjects
- Approximate age of subjects
- Type of music and exact selections
- Method of taking blood pressure including the blood pressure taking tool
- Subjects resting in chair before and measurements
- Blood pressure taken before music played
- Blood pressure taken while music is still going

The manipulated variable was the tempo of the music. The first time their blood pressure was taken they had been listening to no music. The second time they had been listening to slow tempo music and the last time they were listening to the fast tempo music. The responding variable was how much their blood pressure changed, both systolic and diastolic. To measure the responding variable we took each boy's blood pressure with a sphygmomanometer immediately during the third minute the music was being played. A nurse double-checked our use of the sphygmomanometer for accurate readings.

Materials

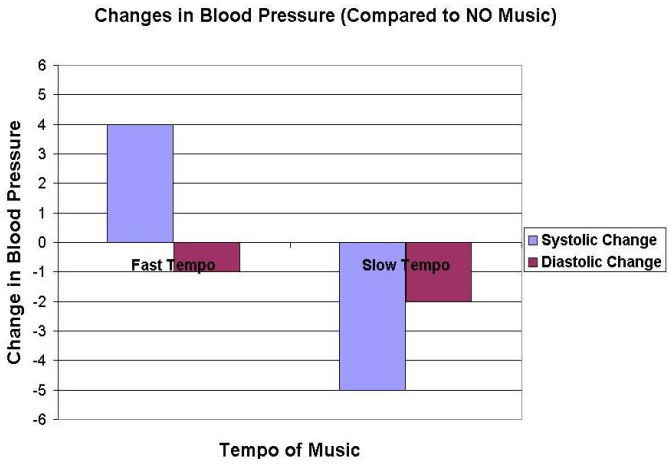
For our experiment design we used 1 no of Tape recorder, Stop watches- 2 nos, Nurse-1 no, Sphygmomanometer with adult medium cuff-1 no, Boys- 8 nos, Tape of fast tempo classical music- 1 no, Tape of slow tempo classical music- 1 no, Chair- 3 nos.

Procedures

- ✓ Enlist help of a nurse with a R.N. degree to double-check our technique and accuracy when measuring the boy's blood pressure. Recruit 8 boys who are in the 6th grade.
- ✓ Give each boy a parent permission slip made for this purpose.
- ✓ Be sure the permission slip is returned and filled out properly before including subject in this.
- ✓ Have all subjects' rest by sitting quietly in a chair for 5 minutes.
- ✓ Take the boy's blood pressure before playing any music and record on data sheet.
- ✓ Play a slow tempo song for 4 minutes at volume level 5.
- ✓ Immediately after 3 minutes have the nurses take the boy's blood pressure and record on data sheet.
- ✓ Repeat steps 4, 6, and 7 again so we can test with fast tempo.
- ✓ Repeat steps 5-9 with the remaining students.

Results

The original purpose of this experiment was to determine how three different tempos of music would affect boy's blood pressure. The results of the experiment were that the slow tempo music blood pressure lowered and the fast tempo music systolic higher but diastolic lowered.



Conclusion

Our hypothesis was that the fast tempo music would raise a boy's blood pressure. We also thought the slow tempo music would lower their blood pressure. The results indicate that this hypothesis should be rejected because on the fast tempo music the diastolic pressure lowered and the systolic went higher. Because of the results of this experiment, we wonder if it would be the same results if we conducted the experiment on girls. If we were to conduct this project again we would probably test more subjects so we were able to get more information. We also would have used softer music and bouncier music. We also would have played the music for a longer time to make sure it was affective. We would also have done half of the subjects on slow tempo then fast and the other half on fast then slow tempo.

References

1. Ardley, Neil. MUSIC, New York, Alfred A. Knopf, Inc, 1989.
2. Blood pressure Encarta 98 USA Microsoft Inc, 1998.
3. Carter Joseph L. Life Science: A Problem Solving Approach, Boston, Massachusetts, Ginnand Company, 1971.
4. Simon, Seymour. The Heart Our Circulatory System, New York, Morrow Junior Books, 1996.
5. Zim Herbert S. Your Heart and How it Works, William Morrow and Company, 1959.