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Кайбушева А.А.

ВЛИЯНИЕ МУЗЫКИ НА РАЗВИТИЕ ПЛОДА В ПРЕНАТАЛЬНОМ ПЕРИОДЕ**Научный руководитель – к.филол.н., Гордеева О.Н.**

Башкирский государственный медицинский университет, Уфа

В работе представлен обзор сведений о влиянии музыки на развитие плода в пренатальном периоде. Данная тема имеет широкое распространение среди женщин. Исследования показывают, что музыкальная стимуляция может оказывать положительное влияние на уровень стресса у плода. Приведенные ниже исследования позволят снизить уровень стресса в организме ребёнка и будущей матери. Для аргументации своей позиции приведены данные исследований.

Ключевые слова: музыка, беременность, пренатальное развитие, стресс.

Kaybusheva A.A.

THE INFLUENCE OF MUSIC ON FETAL DEVELOPMENT IN THE PRENATAL**Scientific Advisor – Ph.D. in Philology, Associate Professor Gordeyeva O.N.**

Bashkir State Medical University, Ufa

The paper presents an overview of information about the influence of music on fetal development in the prenatal period. This topic is widespread among women. Research shows that musical stimulation can have a positive effect on fetal stress levels. The following studies will help reduce the stress level in the body of the child and the expectant mother. The study also includes data from surveys to support this suggestion.

Key words: music, pregnancy, prenatal development, stress.

Music is an important aspect of culture and often accompanies us throughout our lives. However, its effect on fetal development in the prenatal period is of great interest among researchers and future parents. In this scientific work, we explore how musical influences can affect the development of the fetus in the womb. The aim of this study is to investigate influence of music on fetal development during intrauterine development.

Material and methods

To study the effect of music on fetal development, an analysis of the available scientific literature was carried out. The results of various experiments and observations, as well as meta-analyses done in this area, were reviewed.

Results and discussion

In the past, it was believed that the effect of music on fetal development in the womb was insignificant. However, recent scientific research has led to a revision of this opinion. It has been established that the development of the hearing organs begins as early as the seventh week of embryonic development. According to research, starting from the eighteenth week of pregnancy, when the bones in the baby's ear become able to distinguish sounds, the fetus can perceive and respond to them. Interestingly, even sounds from the outside can penetrate through the mother's abdominal wall and be perceived by the baby. In addition, according to research, after 24 weeks of pregnancy, the child is already able to distinguish between different shades of sound.

According to doctors, the fetus can recognize the difference between sharp and sonorous

notes, light and heavy, and between low and high tones.

Moreover, by the thirtieth week of its development, the baby is able to perceive sounds so clearly that it reacts to the intonation of the parent's voice.

Arguments for listening to music:

1. Cognitive development: The cognitive development of a fetus is the process of forming its cognitive abilities even before birth. Although the fetus is in the womb, its brain is actively developing and is able to process information from the outside world.

Research shows that musical stimulation in the prenatal period can have a positive effect on the cognitive development of the fetus. The sounds that the fetus hears in the womb can stimulate the development of neural connections and areas of the brain responsible for cognitive functions such as memory, attention, perception and learning

2. Emotional reaction: Fetuses may show emotional reactions to musical sounds even before birth. Many studies show that the fetus can show reactions to the sounds of the outside world, including music from the middle of pregnancy. These reactions can manifest themselves in changes in heart rate, movements, activity levels, or even changes in hormone levels such as adrenaline. For example, calm music can cause more relaxed reactions in the fetus, while fast and rhythmic music can lead to activation.

Some studies also suggest that the fetus may begin to associate certain musical sounds with certain emotional states of the mother. For example, if the mother often listens to music while relaxing, then musical sounds may be associated with a feeling of calmness and peace in the fetus.

3. Stress reduction: Music can play an important role in reducing fetal stress in the prenatal period. The stress of a pregnant woman can affect her hormonal balance and physiological state, which, in turn, can have an impact on fetal development.

Many studies show that musical stimulation can help reduce stress levels in pregnant women, which has a beneficial effect on the fetus. Listening to calm and pleasant music can help to relax and reduce the level of adrenaline and other stress hormones in both the mother and fetus.

In addition, music can create a favorable atmosphere around a pregnant woman, helping her to relax and relieve tension. It can also affect her overall physical and emotional state, which is important for fetal health and development.

Some studies also show that musical stimulation in the prenatal period can have long-term positive effects on the emotional and psychological development of a child after birth.

M. L. Lazarev, a Russian scientist and pediatrician, described a method called "Sontal" in his scientific works. The name "Sonatal" comes from the Latin words "sonus" - sound, "natal" - born and means "music of pregnancy and birth". This is a method and program for pregnant women on prenatal development and child rearing with the help of music.

This method is aimed at the prenatal development of the fetus by stimulating the early interaction of the mother with him at the stage of pregnancy. It is based on scientific research that confirms the importance of the influence of the mother's voice on embryonic and fetal development. This approach provides for the stimulation of physical activity and the early formation of the psycho-emotional sphere of the fetus. The key element is the use of musical sounds, in particular the voice of the expectant mother, to create a stimulating environment inside the womb. In addition, various types of musical activity are carried out within the framework of the method, such as creative drawing to music, dancing and rhythmic gymnastics, playing musical instruments and active perception of music, which contributes to the overall well-being and development of both the mother and the unborn baby.

At the early stages of the development of the work, a study was conducted in which three groups of women (36 people in total) participated, where the impact of classical music on the activity of a child during prenatal development was studied. The results of the study are shown in the diagram:

1. They have biorhythmic activity - from 20% to 70% of children
2. Move to the sound source – from 9% to 60% of children
3. They have communicative activity – from 62.5% to 88.3%
4. Have a sense of rhythm – from 37.5% to 66.8%

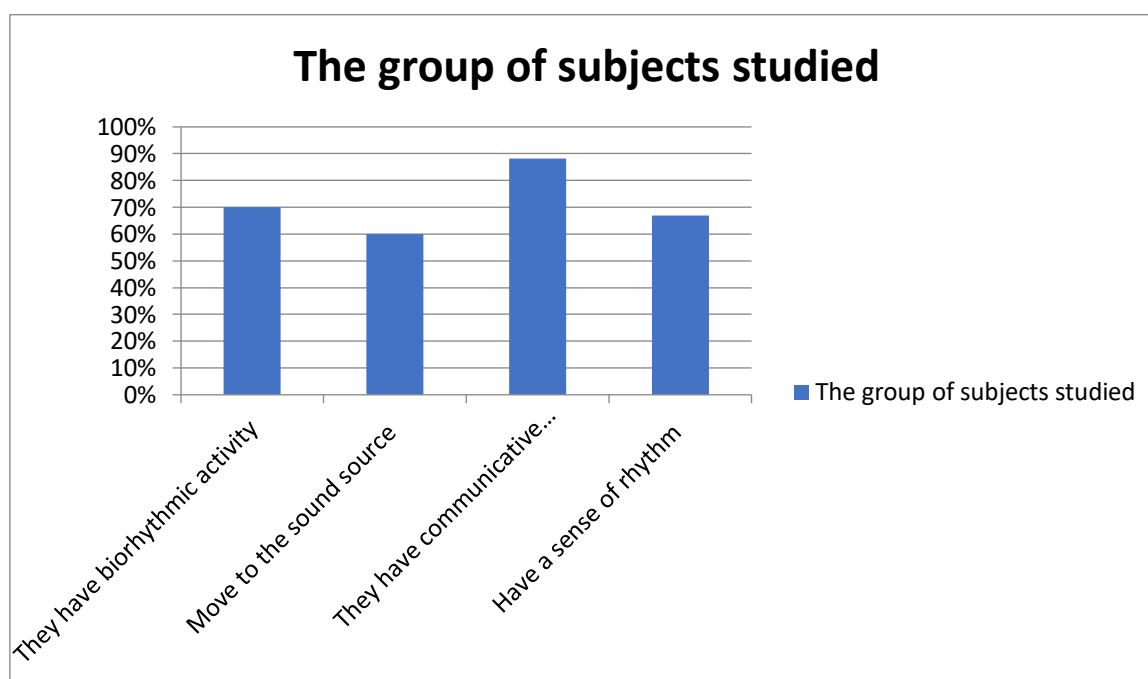


Рис.1 The group of subjects studied

A study conducted among the parents of more than 40 thousand children who used the Sontal technique from 1983 to 2023 allowed experts to draw the following conclusions:

1. High level of full-term pregnancy
2. The level of bodily diseases is reduced

3. There is progress in cognitive functions and physical development
4. Talent in music and visual arts has been identified
5. Reduced manifestations of age-related psychological crises

Now there is a hypothesis that it is precisely because of the lack of intrauterine education that some of the brain's neurons remain inactive in adulthood. Scientists attribute this to the fact that cells begin to atrophy in the womb due to their uselessness.

Conclusion

In the course of this scientific work, it has been found that music has a positive effect on the development of a child during prenatal development. Thus, research into the effects of music on fetal development in the prenatal period continues, and although much remains to be learned, the available data indicate the potential positive effects of music on the development of the unborn child. This opens up new perspectives for the use of music in early impact on children's health and development.

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