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Resting heart rate variability and the effects of biofeedback intervention in women with low-risk pregnancy and prenatal childbirth fear

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Abstract

Most pregnant women are excited at the prospect of seeing their newborn children as the due date approaches, but many women become increasingly anxious about the delivery. Anxiety levels vary among women. Some women experience negligible anxiety, whereas some experience severe anxiety that can affect daily life. The women who have excessive childbirth fear will spend uneasy days with severe anxiety. Such anxiety not only lowers their quality of life but also increases birth-related risks, such as emergency cesarean section, prolonged labor, and postnatal depression. Consequently, in some cases, active counseling is provided to women with childbirth fear. However, there are some issues regarding whether actual intervention is performed or not. First, anxiety is usually a beneficial reaction and an inherent part of our fundamental self-preservation instinct. Therefore, the need for clinical intervention depends on whether the childbirth fear is causing severe anxiety in real life. Second, most women who experience significant childbirth fear are considered "low risk," as they lack any specific risk factors, such as a traumatic past delivery, a psychiatric history, and medical/obstetric complications. Provably, childbirth fear in such women is rarely related to birth-related risks, and rarely manifests into severe anxiety. Therefore, immediate counseling may be an excessive intervention in many cases. The heart rate variability (HRV) biofeedback is a technique in which the subject observes both respiratory and heart rates on a monitor, in order to try to synchronize the two curves until a sinusoidal pattern is obtained. When the pattern is obtained, the subject can maximize respiratory sinus arrhythmia, and become more resilient physically and emotionally. HRV biofeedback has been used as a complementary therapy in the treatment of various psychiatric diseases that are linked closely to psychological stress. As HRV biofeedback is simple and safe and involves almost no physical stress, several recent studies have considered its application for the treatment of daily anxiety in healthy individuals. Therefore, HRV biofeedback can be used for women with childbirth fear. In my contribution to this conference, he would like to talk about our clinical research regarding one of the mental health problems of pregnant women, prenatal childbirth fear. HRV biofeedback appeared to be effective intervention for lowering childbirth fear and perhaps improving their well-being. Considering the ease, safety, and high compliance associated with HRV biofeedback, it is recommended as a primary intervention for women with prenatal childbirth fear.

Biography:

Hideya Kodama is a gynecologist and promoted to a Professor of the Department of Maternity Child Nursing at Akita University Graduate School of Medicine and Faculty of Medicine in 1997. At the Doctorial course of the university, he studied about Nursing Science about a circadian rhyme, including a sleep-wake cycle, a melatonin rhythm, heart rate variability (HRV) and a body thermal rhythm. His research subjects include infants, pregnant women, adolescent girls and visiting nurses. Recently, he published two articles regarding an HRV biofeedback intervention for mental health problems of the pregnant women, regarding severe prenatal childbirth fear and psychological stress during the early postpartum period.

Recent publications:

1. "Nocturnal oxygen desaturation in the late third trimester of uncomplicated pregnancy for prediction of late-onset gestational hypertension", July 2020, Journal of Obstetrics and Gynaecology Research 46, DOI: 10.1111/jog.14362

2. "Screening of the Maturity Status of the Tibial Tuberosity by Ultrasonography in Higher Elementary School Grade School children", June 2019, International Journal of Environmental Research and Public Health 16(12):2138, DOI: 10.3390/ijerph16122138

3. "Effects of night-time on-call work on heart rate variability before bed and sleep quality in visiting nurses", May 2018, International Archives of Occupational and Environmental Health 91, DOI: 10.1007/s00420-018-1317-4

4. "Resting Heart Rate Variability and the Effects of Biofeedback Intervention in Women with Low-Risk Pregnancy and Prenatal Childbirth Fear", February 2018,

Applied Psychophysiology and Biofeedback 43(10), DOI: 10.1007/s10484-018-9389-1

5. "Factors affecting dance exercise performance among students at a special needs school", June 2017, Pediatrics International 59(9), DOI: 10.1111/ped.13338

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