Breast Cancer and mHealth

According to data provided by the World Health Organization (WHO), approximately 1, 38 million cases of newly diagnosed breast cancer are registered, and about 458,000 women die of this disease every year.

Breast cancer is the most common type of malignant tumor in women worldwide. But cancer is not a death sentence. As it has been proved by the WHO, chances are that even the most malignant tumor can be cured successfully provided that it has been timely detected and properly diagnosed and treated.

The problem is that most cases of breast cancer are detected when it is too late, and 32-35% of its diagnosed cases are Stage III-IV breast cancer. Breast cancer late detection is caused by its lack of clear symptoms. The woman doesn't feel anything, and there is no visible manifestation of the disease. And when it finally and fully manifests itself, it's already too late, and the treatment is bound to be heavy, disabling or palliative. But ***breast cancer detection at an early stage changes the situation completely***. Modern medicine has acquired fantastic potential, and cancer if caught at an early stage can be conquered completely.

Two methods are commonly used for breast cancer early detection (screening): monthly breast self-exam and mammography. Currently, mobile technologies – ***mHealth*** and ***wearables*** – are used successfully for breast cancer screening organization in global prospect.

For example, in ***Spain*** women are informed that they are due for a mammography by a text message. Approximately one third of women over 40 have registered their mobile phone numbers in the Catalonian Oncology Institute data base. For each of them a special schedule of mammography tests has been developed for years ahead. 3 days prior to the scheduled date of their test each woman receives a text message containing detailed info on her appointment. This technology has increased by 1.5 times the number of women taking regular tests. This service has proved most effective with female residents of big cities new suburbs and in rural areas (Vidal C et al, 2014).

In 2015, ***Great Britain*** introduced a new SMS service to invite women who reached the age of 40 for their first mammography test. Owing to this, the number of women taking their screening regularly has increased by nearly 2 times (Kerrison KR et al, 2015).

Medical practitioners in ***Canada*** and in ***Great Britain*** have conducted an independent research of Smartphone ***mobile apps*** related to various aspects of breast health. They have discovered approximately 130-150 such applications and about 75% of them are related to breast cancer. 32% of such apps provide information on breast cancer risks and dangers and modern approaches to its diagnosing and treatment, 27% provide educational and training materials, 12% contain screening instructions (including breast self-exams), 2% assist in breast cancer prevention. Approximately 5% of mobile apps are meant for women who have already been diagnosed with breast cancer. They aim at therapy programs management and social support. Such mobile apps help change women's attitude to their own health, make them check for suspicious symptoms, to perform regular self-exams and to keep to schedule of their medical appointments (Bender JL et al, 2013, Mobasheri MH et al, 2014).

In a couple years simple apps containing self-exam instructions and manuals for breast cancer prevention will be replaced by wearables. Wrist Bands, clip-on, smart watches became usual for fitness fans. But a completely new gadgets should be developed for women taking care of their health. It must help perform a regular breast examination and detect different risks and symptoms of a disease at a totally new level of quality, confidence and availability

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