Mobile apps used to assess and monitor nutritional status and malnutrition among seniors

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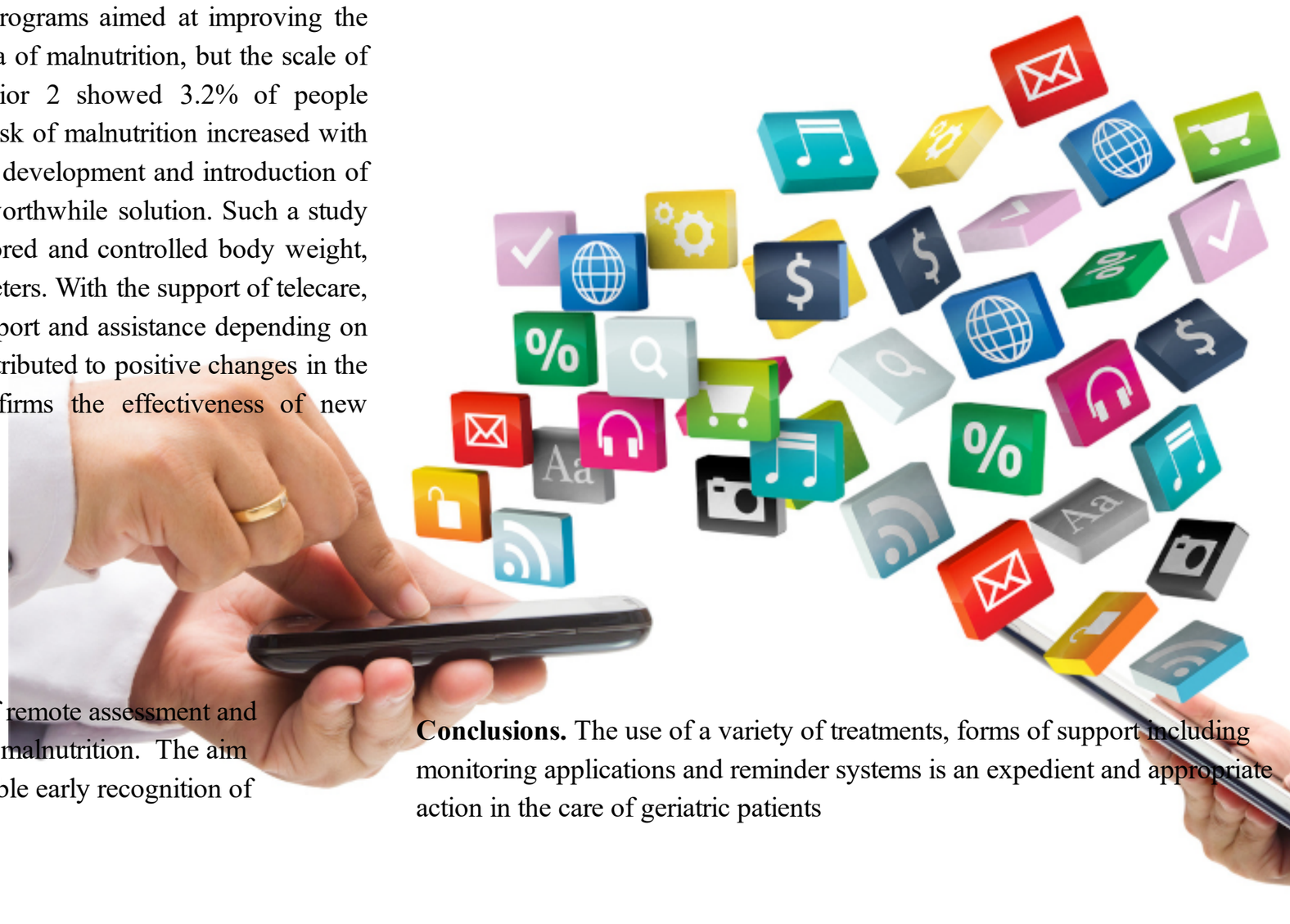
Introduction. The threat of progressive malnutrition and its consequences among seniors is becoming a more frequent phenomenon. Systematic assessment of nutritional status becomes an indispensable element of actions towards elderly people. It allows for quick detection of risks and undertaking nutritional interventions. Unfortunately, malnutrition or threat of malnutrition is often undetected or neglected in treatment. Modern applications designed for the elderly and their caregivers may be helpful in monitoring nutritional status and taking corrective actions.

Results. In recent years, there has been a development of various e-health solutions. Applications and programs are created to reduce health inequalities and improve health through the use of telemedicine, telecare and e-health solutions. The European Parliament together with the European Commission as part of the Recovery Plan for Europe, declare the strengthening of individual care through digital services, development of innovative healthcare systems including telemedicine, and thus increasing control over one's own health[1]. Identification and interventions for malnutrition or at risk of malnutrition requires the interaction and involvement of many members of the treatment team. It is difficult to require every elderly person to be engaged and willing to use new technologies. This should not be an additional burden but a real support. Currently, there are systems available that can be used in the prevention and management of malnutrition. These systems include sensors, video telecare, Istel Care System, videoconferencing, which allow for meal reminders, patient education or measurements[2,3]. Nowadays there are applications available which allow the calculation of body weight, planning of a diet, checking calorific value of products, glycemic index, calculating nutritional value of a meal or analyzing body composition (Fresh Diet.pl, KalkulatorKalorii.net, VitaScale application Child Growth Monitor - CGM)[4]. For example, online diet calculators such as BMI calculator, which will determine the body fat content, WHR calculator allows you to accurately determine your body shape, and the possible type of overweight, waist - hip ratio, AMR calculator i.e. active metabolism spent by the body during various physical activities such as walking, dancing, reading, BMR calculator determines the amount of energy needed to maintain basic vital functions, TER calculator will determine the daily energy requirements (e-manus.pl, KCALkulator).

A senior care program for the prevention or treatment of malnutrition must involve a physician, a nurse, a dietician, a psychologist, a physiotherapist, as well as the caregiver of the elderly person and the senior himself. In Poland, programs aimed at improving the health of seniors have been implemented, also in the area of malnutrition, but the scale of the problem is still large. A recent study by Polsenior 2 showed 3.2% of people undernourished and 23.6% at risk of malnutrition. The risk of malnutrition increased with age, especially in people over 80 years of age[5,6]. The development and introduction of nutritional telemonitoring for the elderly seems to be a worthwhile solution. Such a study was conducted in the Netherlands where seniors monitored and controlled body weight, diet, nutritional status, appetite and blood pressure parameters. With the support of telecare, education by a nurse, the client received appropriate support and assistance depending on the analyzed results. It turned out that telemonitoring contributed to positive changes in the diet and physical activity of the elderly, which confirms the effectiveness of new technologies in patient care [7].



Aim. The aim of this paper is to present possibilities of remote assessment and control of nutritional status with particular emphasis on malnutrition. The aim of the paper is to present available applications that enable early recognition of risks and undertaking and nutritional interventions.

Conclusions. The use of a variety of treatments, forms of support including monitoring applications and reminder systems is an expedient and appropriate action in the care of geriatric patients

Key words: malnutrition, eating disorders , apps, senior

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