THE MEDICO-ORGANIZATIONAL MODEL OF PROTECTION OF REPRODUCTIVE HEALTH OF WOMEN WITH INFLAMMATORY DISEASES OF GENERATIVE ORGANS

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Summary: The work purpose: To develop, scientifically to prove and introduce medical-organizational model of protection of reproductive health of patients with inflammatory diseases of genitals. **Materials and methods.** The female population of fertile age with inflammatory diseases of the genitals, living in the Grodno area per 1954–2008 is studied. The system approach is used, following methods were applied: sanitary-statistical, economic-mathematical, expert estimations, sociological, historical, organizational experiment, modelling and forecasting. **Results.** On the basis of the carried out complex socially-hygienic research including studying of volumes and quality of medical aid, security of obstetric-gynecologic service material, financial and personnel resources, introductions of new organizational, medical and information technologies, studying of the reproductive equipments of women of fertile age and prospects of realisation by them of reproductive function, and also an expert estimation of the importance of the problems bound to disturbances in reproductive system, develop medical-organizational model of protection of reproductive health of women with inflammatory diseases of the genitals, based on state policy realisation in public health services. Model actions are realised in three stages: pregravidal improvement; medical maintenance in pregnancy; The organisation of medical aid to women in childbirth and newborns, and also aftertreatment after a failure of pregnancy and sorts.

Key words: model, reproductive health, female genitals

Introduction

Now inflammatory diseases of female reproductive organs (further - IDRO) are the most frequent cause of infringement of reproductive health of women. Arising thereof medical, social and economic problems are rather appreciable (Ness et al. 2005). So, 24-30% of women note a pelvic painful syndrome within 6 months and more after the tolerated salpingo-oophoritis, 43% have episodes of an exacerbation of inflammatory process; from 10 to 40% remain fruitless. At patients with IDRO in 6 times more often, than at healthy, the endometriosis, at them in 8 times is taped more often, than in the basic population, the uterus leaves (Banikarim, Chacko 2005). At a purulent lesion of appendages of a uterus there is a real threat not only to health, but also life of the patient. Influence IDRO and on perinatal outcomes - levels maternal, infantile and perinatal mortalities (further - PM), frequency of a case rate of newborns is appreciable (Challis et al. 2009). Therefore the prevention and treatment IDRO is the major problem of health protection of women as a state of health of patients with the given pathology appreciably defines breeding potential of a society, and questions of studying and the decision of such prominent aspects as restoration of reproductive function of patients, formation and maintenance of conditions of their reproductive behaviour - are especially actual.

Research objective: to develop, scientifically to prove and introduce medical-organizational model of protection of reproductive health of patients with IDRO.

Materials and methods. Research is based on the general methodological approach to analysis of medico-social factors of health and the illness. Basis of work is the many-stage referred selection. The system approach is used. Following methods were applied: sanitary-statistical, economic-mathematical, expert assessments, sociological, historical, organizational experiment, modelling and forecasting.

The female population of the Grodno range in 1954-2008, including, received medical aid in the conditions of gynecologic and obstetric hospitals is studied; in outpatient conditions - in female consultation (further - FC), including in diurnal hospitals (further - DH) FC. The primary medical documentation of patients with IDRO, received medical aid in outpatient and stationary conditions is analysed. The research base is generated in electronic form, statistical calculations and charts are executed by means of computer programs STATISTICA 6.0.

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Results. Actions of the developed medico-organizational model of preservation of reproductive health of patients with IDRO are based on the system approach and have innovative for Belarus multilevel character; its basic principles are the system approach, interdepartmental character and a stage of performance (figure 1).

The system of actions framed within the limits of model has multicomponent character and includes three stage process of the organisation of medical aid on pregravidal stage, is immediate in the gestation term and after end of pregnancy.

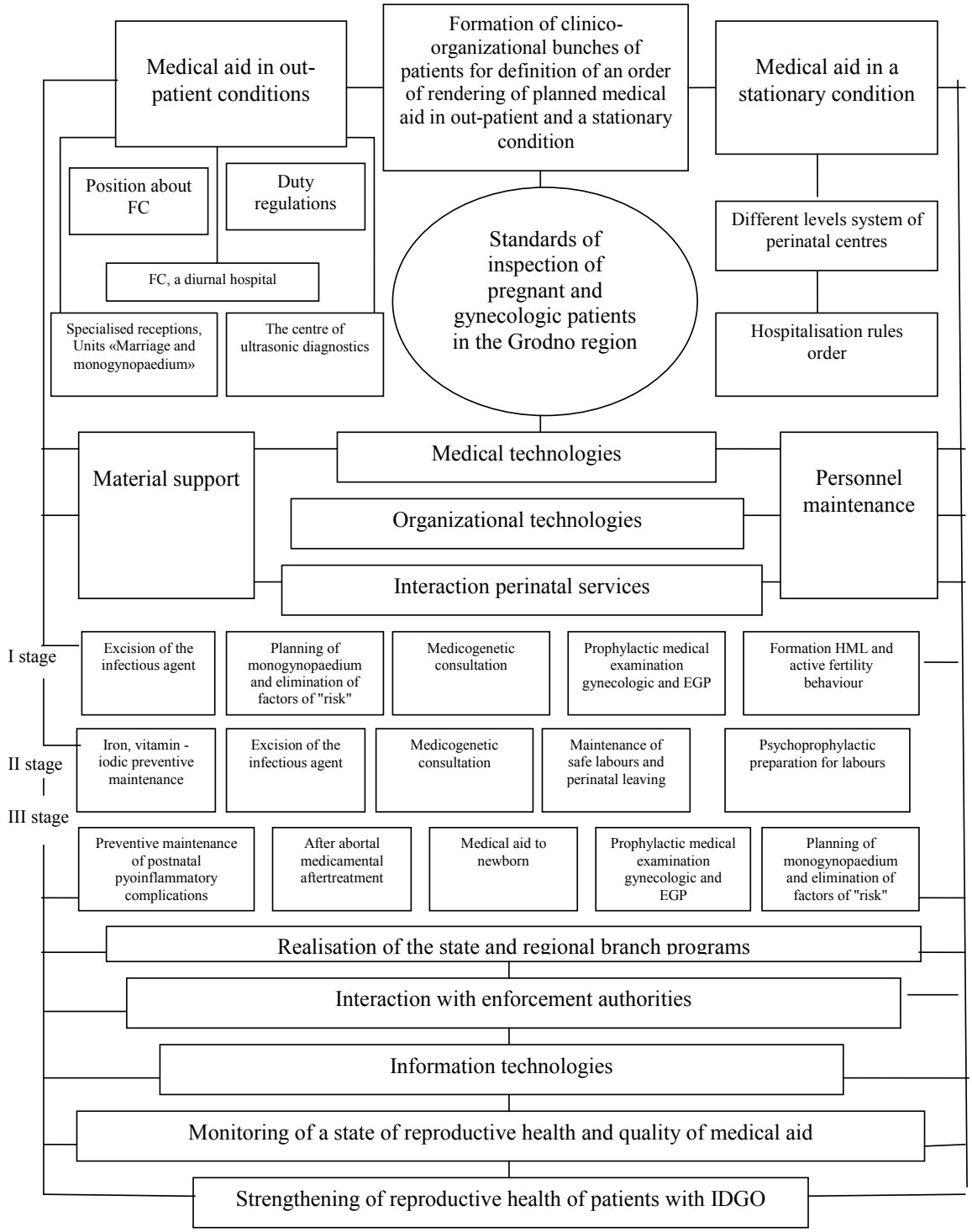

Figure 1. Medico-organizational model of protection of reproductive health of patients with IDRO

At all stages of model mechanisms of the organisation of the medical aid new to Belarus, including is realised: maintenance of obligatory psychophysiological correction for adequate start nejro-gumoral and endocrine parts of regulation that allows to normalise further flow gestation processes; introduction in all public health services (further - OPHS) the developed Standards of inspection and treatment of pregnant and gynecologic patients (further - Standards) which cover for the first time all nosological forms of an obstetric-gynecologic pathology; each stage of their application allows to unify the diagnostic and medical procedures necessary as for statement of the diagnosis and sanation of a pathology in «classical» cases, and to carry out differential diagnostics and to define treatment tactics in complex cases for diagnostics.

Orifices in model are bodies of interest - patients with IDRO. For research objective achievement - strengthenings of reproductive health of the given contingent of women - at the first stage of model are solved problems of building of conditions for elimination of disturbances in functioning FRS and births of healthy children by perfection of the organisation of the treatment-and-prophylactic help on a pregravidal stage, mainly in out-patient conditions. Working out and introduction in all OPHS ranges of sample position about FC with a substantiation of volumes of medical aid, and also the conforming maintenance with resources and perfection of a control system by level of primary medical aid on the basis of the expert control and quality monitoring became a basis of such mechanism.

Building of new phylums of structurally functional units on the basis of already existing sectionings and offices FC specialising on diagnostics and treatment of pathology became the main microeconomic element at the first stage of model. The basic parts in such structure are presented as «by the centre on a functional basis» (the centre of ultrasonic diagnostics), and profile unit in structure FC («Marriage and monogynopaedium»); the special place is shunted to a diurnal hospital as to the structure, allowed to realise in out-patient conditions a principle of the specialised help which has provided on the basis of proved economic feasibility rising of a degree of quality of life and satisfaction of patients. For each concrete variant indications for a direction and hospitalisation, the demand to the medical documentation are defined regular structure, an operating procedure that has allowed to consider medico-social characteristics of patients with IDRO and to provide the nonconventional approach to the organisation of medical-diagnostic process. The given approach consists in studying clinico-anamnestics characteristics, integrates qualitative and quantity indicators characteristic for the given contingent of women of social medium and provides search of a probable cause of illness; an assessment of degree of influence on a state of reproductive health of controlled and is conditional-operated medico-social factors; definition of a priority of problems on which decision the co-ordinated activity of some various services and departments is focused; intensive treatment with application of a complex of medicamental and not medicamental methods; effective aftertreatment; Building of the motivations adapting patients to active social and labour activity; realisation together with educational bodies of a complex of actions for formation healthy mode of life (further - HML) among girls-teenagers and women of young reproductive age with accent on questions of preservation of reproductive health within the limits of the specialised centres, including preventive maintenance IDRO and abortions, realisation of the sex and reproductive rights; definition of the forecast and a disease outcome.

The integrated approaches based on formation and prophylactic medical examination of bunch «reserve of sorts» (further - BRS) are developed innovative for Byelorussia, including прегравидарное improvement which wears a binding character, and its basic actions are carried out 3 months prior to planned pregnancy in out-patient conditions, including the work organisation on medico-genetical consultation of married couples. Within the limits of prophylactic medical examination of patients BRS are carried out: routine inspections with formation on the developed algorithm of bunches of «risk» on development IDRO and disturbances in female reproductive system (further - FRS); stage-by-stage observation and control of a state of health of contingents of bunches of «risk»; the standardised methods of revealing IDRO; formation of clinico-organizational bunches of patients for definition of an order of rendering of planned medical aid in out-patient and a stationary conditions.

Actions *of the first stage* of model have allowed to organise carrying out of monitoring of a state of reproductive health of patients in the course of medical aid rendering, to automate processing of the information and to estimate on this basis an overall performance as the attending physician, and establishments obstetric-gynecologic service (further - OGS) as a whole.

Maintenance of interaction of technological elements of rendering of medical aid to patients in out-patient and a stationary conditions on the basis of the mechanism of acceptance of the strategic administrative decision on building of new phylum of specialised structures to which additions and changes depending on concrete conditions of functioning OPHS can be made became a basic principle of functioning of model *at the second stage*. Efficacyy of functioning of these structures consists in the following: in a substantiation of necessary volumes of medical aid and real financial requirement of concrete sectionings at priority financing OGS with maintenance with necessary material resources; in perfection of the organisation of the medico-preventive help to patients with IDRO at levels «FC - a maternity home»; in the organisation and wide use of diurnal hospitals for inspection, improvement and

aftertreatment of pregnant women; in working out of the actions providing guarantees of free medical aid to pregnant women, parturient women and newborns in terrain of range with activity reforming of different levels perinatal centres; in building of standard base and working out of the documents which are regulating activity OGS and being a legal basis for introduction of model on the basis of the mechanism of the expert control; in working out of uniform information database OGS of range for maintenance of monitoring of its activity at all levels.

At building of algorithm of observation over patients with IDRO in pregnancy the new approaches which have resolved synchronously to estimate efficacyy of functioning FRS in comparison to its adaptive potential and, the most important thing, with the personal equipments on pregnancy as motivational immaturity at women of the given medico-social bunch substantially defines inadequacy of all kinds of functional «responses» in the term gestation that does not provide optimum performance of different parts of system "mother-placenta-foetus" are applied. In these conditions «risk» bunches on probable unfavorable flow of pregnancy and sorts taking into account definition of patients with the anamnesis burdened IDRO and unfavorable perinatal by outcomes are organizational generated; the chronic extragenital locuses of an infection contamination; disturbances in FRS (sterility, disorders of a menstrual cycle); carrying out free jodo - iron - and vitamin preventive maintenance is organised; Interaction of interfacing services at level of primary medical aid is provided; carrying out of ultrasonic inspection and medico-genetical consultation under the standardised indications is organised.

The developed integrated mechanisms of conducting pregnant women with high infectious «risk» at the second stage of model include: the organisation of clinico-laboratory inspection for verification of a genital or extragenital infection contamination not less than two methods, research of the immune status and nonspecific resistance according to the developed algorithm; the organisation of rendering of the emergency obstetric-gynecologic help according to the developed list of extreme situations and the introduced algorithm of actions of the medical personnel at their occurrence, and also order of a call of a regional reanimation brigade; complex system of the actions, allowed to organise an assessment of a pre-natal state of a foetus and it antenatal preservation; forecasting of flow of pregnancy, sorts and a state of health of newborns according to the taped factors of «risk»; carrying out of a course of preventive maintenance of a syndrome of respiratory disorders of newborns; preparation of patrimonial pathes; a childbed induction; analysis of efficacyy of rendering of medical aid according to the developed algorithm.

The organisation of medical aid to patients with IDRO in a puerperal period became the purpose of actions *of the third stage* of model. New procedures of preventive maintenance of the pyoinflammatory complications, including are developed and applied: introduction of methods of rational antibacterial therapy after operations cesarean sections; an acceleration of healing of postoperative wounds; application of procedures of preventive maintenance of a postnatal metroendometritis and mastitis, including the patented technologies.

The framed system of aftertreatment after a failure of pregnancy and sorts includes the new two-level mechanism: at level of establishment of obstetric aid: the organisation of the general and psychologic assessment of a state of health of the woman in childbirth and its correction; at level FC: a complex of actions for the dispensary observation organisation, including excision of the infectious agent; research of adaptic potential of a female organism; psychologic testing; consultation by the doctor-therapist and if necessary - doctors of other specialities; carrying out of medico-genetic consultation; child-bearing planning at observation in BRS. The organisation of inspection of patients for finding-out of a pathogenetic variant of disturbance of reproductive function with the subsequent carrying out of therapy, an assessment of its efficacyy and planning of the following pregnancy became a nonconventional component of the third stage of model.

On a model exit the important role is shunted to forecasting of results on the basis of an assessment of a state of resource maintenance OGS and analysis of the real reached parametres of reproductive health of patients with IDRO, and also level and structure of reproductive losses. Framed for the decision of this problem innovative for Belarus the technological system of the collecting and the automated processing of the medico-statistical information includes the developed computer programs which features are completely a computer three-level quality monitoring of reliability of the given data, the automated formation of summary reports with possibility of their converting in different electron formats, efficiency of analysis, possibility in case of disharmony of the expected and reached indicators of reproductive health to subject to perfection components or to correct statement of problems, objects, the volumes, expected indicators. Results of analysis with the established periodicity are given in control of public health services of regional executive committee and administration OPHS for the purpose of acceptance of timely administrative decisions on optimisation of interaction of services of public health services on strengthening of reproductive health of patients with IDRO, health protection of mother and the child.

It is established, that actions of the developed and introduced medico-organizational model have high medical, social and economic efficiency.

It is established, that in 1999-2008 in the Grodno area there were no cases of parent death from infectious-inflammatory complications of pregnancy and childbirth.

In 2004-2008 in comparison with the previous fifth anniversary level PM in area it is considerable - on 42,3 % - has decreased (p <0,05). By 2008 the difference of indicators PM between city and rural settlements to 0,1 ‰ that testifies to medical aid improvement of quality to rural inhabitants was reduced. In 2008 will reach a minimum level of indicator PM for a decade, made 4,1‰ (figure 2) which was considerable below an average republican (5,0 ‰) (p <0,05).

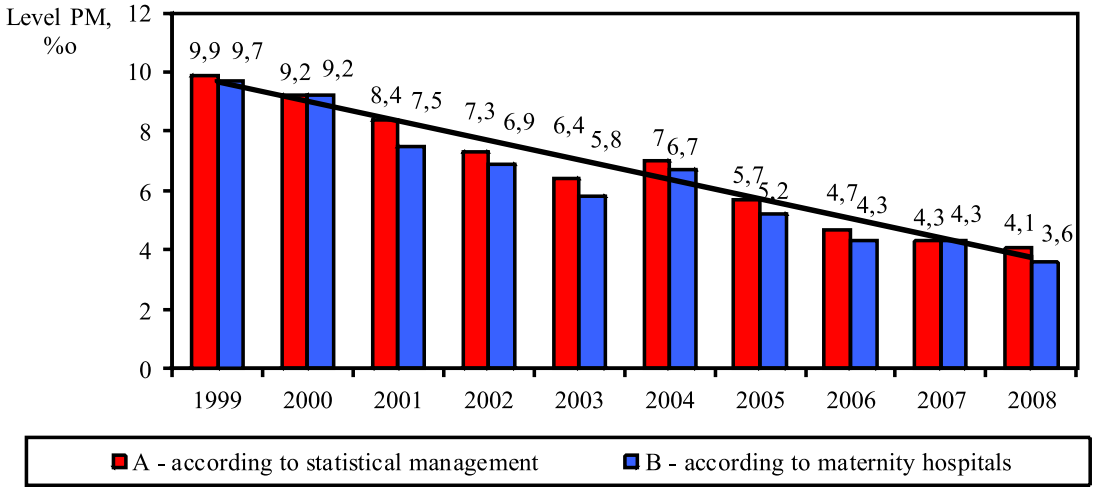

Figure 2. Dynamics PM in 1999-2008

In 2004-2008 in comparison with 1999-2003 structure PM has changed: a leading place has borrowed the foetus asphyxia because of infringement uterus-plecenta-umbilical blood circulations - 52,16±14,37 %. The second rating place belonged congenital developmental anomalies at the fruits which share has made 26,90±4,32 %. On the third place there were pre-natal infections - 7,80±2,13 %. The syndrome of respiratory frustration has taken the fourth rating place - 4,64±2,67 %.

Structure PM change has been connected with reduction of a share of pathological changes of inflammatory character in a placenta and an umbilical cord with 100,0±0,0 % in 1999-2003 to 46,41±2,87 % in 2004-2008 (p <0,05), a consequence associate (simultaneous or consecutive) becoming infected of various activators in different terms of pregnacy (r=0,8479). It has led to reduction of mid-annual number of cases (on 16) deadbirths and early neonatal death rate.

It is established, that structure PM change has been caused by introduction perinatal technologies of medico-organizational model of protection reproductive health (further - RH) of patients with IDRO.

So, as a result of perfection of system of the organisation pregravidal improvements, including the medico-genetic help on pregravidal a stage and during pregnancy, efficiency perinatal diagnostics has increased: in 2004-2008 in term till 22 weeks of pregnancy came to light to 90 % lethal and sublethal to congenital developmental anomalies, and after 22 weeks - no more than 10 % (table 1).

Table 1. Detectability of congenital developmental anomalies in the Grodno area in 1999-2008 (in % to the general number)

Indicators	M±m		p
	1999–2003	2004–2008	
Annually detected congenital developmental anomalies	84,23±4,45	69,57±4,42	<0,05
Annually detected congenital developmental anomalies after 22 weeks of pregnancy	14,36±2,34	7,27±1,32	<0,05

It is established, that, despite relative density of interruptions remaining within decade under medico-genetic indications in structure finished pregnancy (0,4-0,7 %), in 2004-2008 a share of women by which pregnancy has been interrupted in term of 12-22 weeks under medico-genetic indications, it was reduced in 1,4 times (p <0,05).

Direct negative correlation of coverage pregravidal preparation of patients and frequencies of defects of a nervous tube at foetus and newborns (r =-0,9512) is revealed (figure 3).

Besides, accurate dynamics of reduction of cases of revealing congenital developmental anomalies of nervous tube in terms more than 12 weeks of pregnancy has been registered, that in addition testifies to improvement of quality of medical aid to patients with IDRO. It, in turn, has led authentic (p<0,05) to share reduction congenital developmental anomalies neural tubes in structure PM in 2004-2008 in comparison with 1999-2003 which in 2008 have taken last rating place, and their relative density has made 6,3 %.

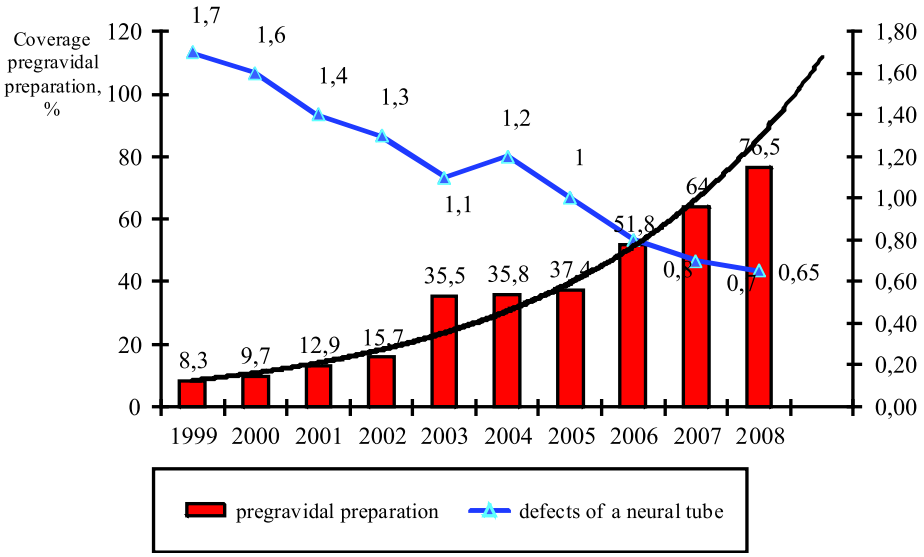

Figure 3. Dynamics of coverage pregravidal preparation (%) and frequencies of defects of a neural tube (‰) (foetuses + newborns) in 1999-2008

Efficiency of the lead actions to pregravidal improvement was expressed also in reduction PM from congenital developmental anomalies (figure 4).

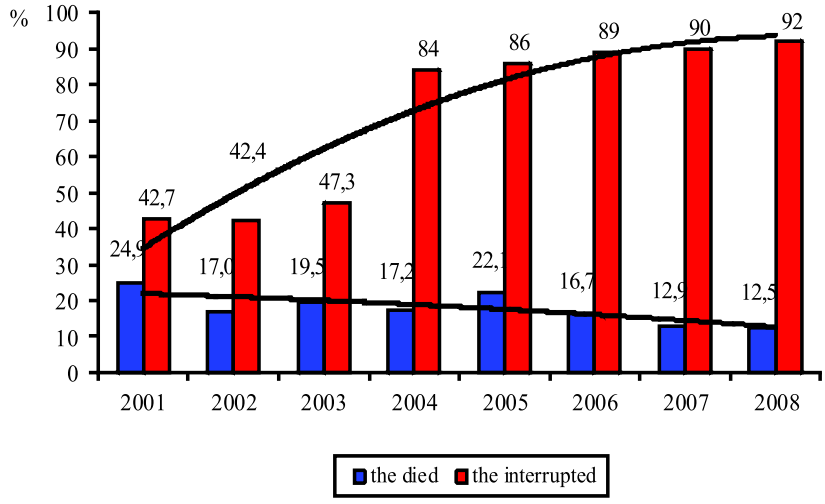

Figure 4. Antenatal elimination and a lethality from congenital developmental anomalies (r = -0,6551)

System of rendering organised according to the international approaches (Nepomnaschy et al. 2007) to the perinatal help in 3 level perinatal centres (further - PC) has allowed to provide availability of the highly skilled help as to pregnant women, and newborns and has made positive impact on decrease in level PM (r =-0,7322). Besides, level reduction perinatal losses has been caused by active application of the developed and introduced techniques of treatment vaginitis and disbiotical conditions at pregnant women at different levels of rendering perinatal help (r=0,8347), methods antenatal foetus protection (r=0,7749), rational medicamentous therapy of pregnant women, women in childbirth and newborns, including, carrying out of preventive maintenance of development of a syndrome of respiratory frustration by dexamethasone (r=0,7129), and also active use artificial surfactant for its treatment (r=0,6837).

Introduction of technologies of the organisation of preventive maintenance, early revealing and prophylactic medical examination IDRO (r=0,7672), activity activization on formation HML with coverage substantial growth by all kinds of contraception in different age groups of patients (prevalence intrautery contraception on 1000 women fertility age in 2008 has made 341,4, hormonal - 377,8) (r=0,8173) had a consequence in 2004-2008 in comparison with 1999-2003 considerable reduction (in 1,3 times) not planned pregnancy: to 12,7±0,89 on 1000 women fertility age ($p<0,05$).

So, for a decade prevalence of abortions has decreased in 2,1 times to 11,2 for 1000 women fertility age ($p<0,05$). In 2004-2008 in area, there were no cases of criminal abortions. Approximation of data, and also the equation polynomial trend with high degree of reliability ($R^2=0,8423$) have allowed to assert, that noted tendency to decrease in quantity of abortions will remain and further.

As a whole, among women fertility age with IDRO mid-annual reduction of number of reproductive losses has made 980 products of conception. It, in turn, had a consequence increase in mid-annual number of births (460 cases) and an indicator of birth rate which in 2008 has reached the highest value since 1993, and has made 11,3‰.

With allowance for mid-annual reduction (decrease) of terms of stay of patients with IDRO in a gynecologic hospital, reductions of level of a case rate with temporary disablement, reductions of costs for rendering assistance to patients in labours and the postnatal period, decreases of mid-annual level of reproductive losses (980 products of conception), decreases of mid-annual number of cases it is dead births and an early neonatal mortality (16 cases), augmentation of mid-annual number of births (460), and also the mid-annual income which will be received by the state from in addition born citizen with allowance for costs for it of the state additional economic benefit for the fifth anniversary has made: 21 822 188 652 thousand roubles (in the prices of 2008).

Discussion. In modern social and economic conditions, the state of reproductive health of the female population remains to one of the most acute medico-social problems, being a prominent aspect of national safety.

The factors is essential influencing development of a pathology of FRS, keep within the general concept of conditionality of public health: an external environment, a mode and life conditions, medicobiological factors, a state of public health services (Nakamura et al. 2008).

Thus, medico-social aspects of female reproductive health have strategic value, and the new methodological base of its formation and preservation becomes an essential scientifically-practical problem of maintenance of health of the nation. Thus at the present stage of development of public health services to database building, in particular, in system alarm, mediate and net results in the field of an assessment of potential of reproductive health, the major significance is attached. These data form a basis for introduction in activity of the organisations of OPHS new technologies for optimisation of the administrative process based on use of the international standards.

Experience of the previous researches in the given range testifies, that reproductive health of women is pawned from first days of their life, formed in the conditions of socially-medical medium and determines breeding potential of a society as at influence of unfavorable medico-social factors the obstetric-gynecologic pathology in the form of disturbances of specific functions of a female organism quite often educes, complications of flow of pregnancy and sorts**,** health of newborns (Grigsby et al. 2010; Shim et al. 2004).

In the lead position in structure of the educed gynecologic pathology is occupied with IDRO. Patients with the given pathology compound more than 50 % outpatient and about 30 % of stationary gynecologic patients, and last years in Belarus, as well as all over the world, constant growth of a case rate is registered (WHO 2007).

There are many the scientific researches devoted IDRO, however it is necessary to notice, that there is a wide spectrum yet not solved problems.

So, till now there are no basic researches IDRO, not studied there is dynamics of a case rate in a time historical retrospective show that does not allow to frame a full-scale picture of a state of reproductive function of patients at subpopulation level and to generate uniform approaches to the decision of a problem of preservation of reproductive health taking into account high prevalence IDRO.

Many problems of strategic and organizational character, including questions of formation of a HML which are not surveyed as a condition and result of successful socialisation of the person are not solved. The system of motivation and valuable orientation, knowledge of young women of factors of "risk", their feature saving up health and reproductive behaviour that does not allow carrying out action of corrective character to the full is not studied.

Degree of influence of a social background on level and structure of a gynecologic and extragenital pathology (further - EGP) is insufficiently estimated at women with IDRO, is incomplete features of formation and a state of their reproductive health are studied, there is no monitoring of research and the conforming analytical assessments for working out of expert approaches and methods on its conservation and strengthening on the basis of the regional scientific concept which would consider a considerable quantity of factors unfavorablely influencing on FRS in the different age seasons of its formation and realisation.

Many prominent aspects of medical aid to patients taking into account perfection of organizational and medical technologies, a network are not surveyed with use of modern demonstrative base in a historical retrospective show, personnel potential and standard base of OGS on the basis of active interaction with enforcement authorities that has not allowed to generate till now the conforming medico-organizational model to estimate its medical, economic and social efficacyy and in a complex to solve a problem of strengthening of reproductive health of women with IDRO.

On new methodological base should be based and a scientific estimation of the basic indicators of activity of service of obstetric aid on improvement RH of the women which basic directions examined in the literature are *the structure, process and outcomes* (Burrington-Brown et al. 2005).

The structure of an estimation of quality of medical aid by researchers joins material resources (budgetary financing and off-budget means, materials and the equipment etc.), the personnel (number, professional suitability, qualification etc.) and organizational characteristics of activity. However in modern researches to structure of an estimation of quality (except for questions of financing of public health services) it is not given considerable attention, there are no works in which on modern demonstrative base in a historical retrospective show various aspects of medical aid to patients with IDRO would be studied, directed on their improvement RH, taking into account perfection of personnel potential and standard base of obstetric-gynecologic service (further - OGS) (Bonzini et al. 2007).

According to researchers, the estimation of technologies in public health services gets the increasing value in the modern world as achievements of a medical science lead to occurrence of more modern and, frequently, more expensive of the equipment and medicines. Limitation of resources obliges doctors and heads of public health services to provide quality of medical aid within the limits of available budgetary funds. The trustworthy information is necessary for a possibility of acceptance of correct administrative decisions about clinico-economic efficiency and productivity of application of technologies in public health services**.** However, till now researches of their clinico-economic efficiency at medical aid rendering to the given contingent practically are absent (Dautov et al. 2009).

In this connection in rendering of medical aid to patients with IDRO the system of examination of its quality has special value. The expert estimation allows to do the given reason conclusions about presence of defects in its rendering at different stages and various links OGS. However, the analysis of a problem of quality of the obstetric-gynecologic help to patients testifies, that to the present time there are no standard standard approaches to its decision at level the public health services organisations (further - PHSO). Along with it, also there are no uniform approaches to an expert estimation and the analysis of quality of medical aid territorial PHSO (Stanishevsky 2005).

Thus, despite constant perfection of organizational technologies, medical aid improvement of quality to the female population, ascending of the importance of the existing medical control of improvement of patients with IDRO, new complex researches for a scientific substantiation and working out of the system unified and standardised organizational and medical actions for preservation and strengthening of reproductive health of the given contingent at all stages of medical observation are demanded.

Conclusion. Thus, in the course of research the important medico-social problem is decided - significant strengthening RH of patients with IDRO, and perinatal technologies introduced within the limits of medico-organizational model is reached, have expressed medical, social and economic efficiency.

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PHYSICAL ACTIVITY AND BODY COMPOSITION OF 5 TO 7 YEARS OLD CHILDREN

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Junger J., Palanska A., Čech P., (2014) *Physical activity and body composition of 5 to 7 years old children*. Health Problems of Civilization 3 (8), p. 12-19.

Summary: Current exercise prescription and physical activity guidelines recommend preschool children to perform at least 60 minutes of moderate to vigorous structured physical activity and at least 60 minutes of unstructured physical activity every day. The purpose of this study was to extend knowledge about the volume of physical activity in 5- to 7-year-old children in relation to their body composition. Also, we recorded the course of growth changes and physical activity levels in 6-year-old children in the previous half century. The sample consisted of 69 pre-school age children (5 - 7 years) attending selected kindergartens located in the area of Presov self-governing region. Of 69 children, 36 were girls and 33 were boys. The volume and intensity of physical activity performed by children during their stay in kindergartens was measured using heart rate monitoring system POLAR Team^2 Pro. Body composition was assessed using direct segmental multi-frequency bioelectric impedance analysis (DSM-BIA) device InBody 230. Parameters of somatic development corresponding with the secular trend are disproportionate to children's physical activity, which is considered to be an irreplaceable factor underlying health of children. However, the physical activity levels of children are decreasing. The volume of physical activity does not meet the minimum standard recommended by NASPE (Prokopec et al. 1986) and average intensity of physical activity expressed by heart rate does not reach the medium intensity zone.

Key words: preschool child, body composition, physical activity, obesity, norms

Introduction

One of the most beneficial values and primary factors determining quality of life is state of health. As no one can take it for granted, each of us should take care of their health throughout their entire lives. Therefore, educating and leading children towards pursuing a healthy lifestyle during initial stages of ontogeny is the most important and the most effective purpose in life.

Knowledge about lives of our predecessors has confirmed that physical activity has been dominant in promoting health of people throughout entire phylogeny (Junger 2010). Performing regular physical activity (PA) in childhood increases levels of future physical activity in adulthood (Kraut 2003, Malina 2004). Positive effect of physical activity on health is generally known and has been supported by scientific evidence. Moreover, regular physical activity increases physical fitness, improves body weight and promotes overall health depending on the optimal physical activity level (LaMonte 2009). According to physical activity guidelines for children preschoolers should accumulate at least 60 minutes daily of structured physical activity and should engage in at least 60 minutes of unstructured physical activity (National association for sport and physical education). Children should perform moderate to high intensity physical activity, which corresponds to 130 bpm, or more than 3 METs. Corbin, Pangrazi (Corbin 1996) and Pangrazi, Corbin & Welk (Pangrazi 1996) have reported that children should perform at least 30 to 60 minutes of moderate to vigorous physical activity during their school time and leisure time. It should be noted that almost 30 years ago, to stimulate the natural development of their organisms children were supposed to engage in physical activity during 60% of time being awake, which amounts to approximately 6 hours (Kučera 1991), at least 2.5 to 3 hours of physical activity in the average zone for the stimulation of cardiovascular functions equaling to 150% of resting values (Kučera 1985, 1991).

Despite decrease in the recommended physical activity levels, several studies have reported that preschoolers do not engage in sufficient physical activity. According to Tucker (Tucker 2008) only 54% of participants throughout the studies analyzed achieved current NASPE recommendations suggesting a minimum of 60 minutes of physical activity per day. The current trend in low physical activity levels is not being eliminated accordingly. Over the

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past few years, pediatricians have revealed that children suffer with diseases present in adults such as hypertension, cardiovascular and respiratory diseases and diabetes. These diseases share overweight as an identical risk factor. Compared to their age-matched counterparts from the 1960s to 1980s, present children are taller (boys by 1.4 cm and girls by 1.2 cm) and heavier (Prokopec 1986, Blaha 1990, Blaha Vignerova 1998, Junger 2010). As reported by Canning, Courage, & Frizzell (Canning et al. 2004) and WHO (World Health Organization) as much as 22 million children under the age of 5 are obese. In Slovakia, 6% of children are overweight and 12% are obese (Béderová 2003). Chronic and non-infectious diseases including overweight and obesity cause 63% of deaths worldwide, which amounts to 36 million deaths per year. The number of deaths in childhood and at productive age was 9 million (World Health Organization). Therefore, engaging in physical activity as a beneficial factor (National association for sport and physical education) should be emphasized in terms of obesity prevention (Hainer 2004).

Objectives

The purpose of this study was to extend knowledge about the volume of physical activity in 5- to 7-year-old children in relation to their body composition. Also, we recorded the course of growth changes and physical activity levels in 6-year-old children in the previous half century.

Material & methods

Participants

A non-randomized cross-sectional study was used to describe body composition and physical activity of preschool children and to evaluate gender differences. The sample consisted of 69 preschool age children (5 - 7 years) attending selected kindergartens located in the area of Prešov self-governing region. Of 69 children, 36 were girls and 33 were boys. Mean age, body height, body weight and body mass index at the time of measurement was 5.9 ± 0.5 years, 116.1 ± 6.0 cm, body weight 21.3 ± 4.0 kg and 15.7 ± 2.0 $kg.m^{-2}$, respectively. At the time of testing, children did not suffer with any metabolic or motor disorders that could have effect on test results.

Measures and Procedures

The volume and intensity of physical activity performed by children during their stay in kindergartens was measured using heart rate monitoring system POLAR Team^2 Pro (Polar Electro; Kempele, Finland). This system allows for direct and real-time heart rate monitoring of several individuals at the same time. Data are transmitted wirelessly to a receiver which is connected with a standard laptop with relevant software. The results of this study are based on data of 40 randomly selected children due to objective reasons connected with conducting the research. During the entire time spent in kindergartens, children wore heart rate monitors to determine their average heart rate. Also, we determined the average heart rate during physical activity performed in the kindergarten. The intensity of physical activity was set at 135 bpm (3 METs), which corresponds with at least medium intensity exercise monitored according to NASPE. In total, we monitored 40 days during summer and fall under standard weather conditions typical for these seasons of year. Average daily temperatures ranged from 17 to 25°C. Children had a chest strap attached to their chests and wore it for approximately 8 hours per day. The volume of their physical activity during their leisure time was determined according to time records filled in by their parents during the weeks children were monitored.

Before analysis of body composition, the participants took part in the basic measurement of anthropometric parameters. Body height was measured using a portable stadiometer (SECA 217, Hamburg, Germany) to the nearest 0.1 cm. Body weight was measured to the nearest 0.1 kg. Body composition was assessed using direct segmental multi-frequency bioelectric impedance analysis (DSM-BIA) device InBody 230 (Biospace Co., Ltd.; Seoul, Korea). In Body 230 device uses 8-point electrodes and uses the principle of 10 impedance measurements by using two different frequencies 20 kHz and 100 kHz at each 5 body segments. Measurement history was retrieved using database management software Lookin'Body version 3.0 (Biospace Co., Ltd.; Seoul, Korea). To compute indirectly measurable parameters we used prediction equations available for particular age categories. Body composition was measured using the bioimpedance method under standard conditions described in the BIA guidelines (Kyle 2004). The room temperature was kept between 20 and 24°C to prevent undesirable changes in body water composition. Among parameters measured were skeletal muscle mass (SMM), absolute value of fat free mass (FFM), percentage of body fat mass (PBF), waist to hip ratio (WHR), estimated value of basal metabolic rate (BMR) and parameters of nutrition in the protein mass (PM) and mineral mass (MM).

Statistical Analysis

Collected data were processed statistically and effect size analysis was conducted. Descriptive statistical characteristics of data were arithmetic mean as measure of central tendency and standard deviation as a measure of variability. The statistical significance of gender differences in parameters of the participants' body composition and physical activity parameters was determined using t-test for independent samples. The equality of variances was assessed using Levene's test (F-test). To reject the null hypothesis and to accept alternative hypothesis, level of significance was set at $p < 0.05$.

Practical significance by gender was assessed using coefficient "Eta square" (η^2), which determines the contribution of the contribution of an effect. The effect size of the factor was assessed according to Cohen (Cohen 1988) $\eta^2 < 0.06$ (small), $0.06 \leq r < 0.14$ (medium), $r \geq 0.14$ (large).

The association between selected measures of body composition and physical activity levels irrespective of gender of preschool children was determined using Spearman's correlation analysis, which was selected due to low sample size ($n = 40$). Statistical analysis was carried out using IBM SPSS Statistics 20 software.

Parents of participants received a verbal description of the study procedures before testing and completed a written informed consent that was approved by the ethical committee of Presov University in Presov. Measurements were performed according to the ethical standards of the Helsinki Declaration.

Results

One of the purposes of the study was to assess body composition of preschool children. Descriptive and statistical data on body composition according to gender are presented in Table 1. There were no statistically or practically significant differences between genders for age, body height, body weight and BMI. The greatest differences, although insignificant, were found for body height and body weight. Boys were taller by 2.3 cm and heavier by 0.9 kg than girls. There were minimal differences with regard to differences between children relative to age and BMI. Similarly, no statistically significant ($p > 0.05$) or practically significant ($\eta^2 < 0.06$) differences were found for body composition parameters. The difference between genders for percentage body fat (PBF) was 2.2%. Significant differences between boys and girls with medium size effect was found for skeletal muscle mass (SMM), fat-free mass (FFM) and basal metabolic rate (BMR). Higher values in body composition parameters were found for boys. Significant gender differences confirmed by large size effect were found for parameters indicating nutritional status of children, i.e. protein mass ($t_{(67)} = 2.571$, $p = 0.012$, $\eta^2 = 0.90$) and mineral mass ($t_{(67)} = 2.559$, $p = 0.013$, $\eta^2 = 0.89$). Values for these body composition parameters were higher for boys than girls.

In addition to body composition assessment, we analyzed physical activity levels in both the kindergarten setting and the home setting. With respect to parameters used to assess physical activity levels, significant differences between boys and girls were found for average heart rate during physical activity ($t_{(38)} = 2.459$, $p = 0.019$, $\eta^2 = 0.137$) and the volume of physical activity performed in the kindergarten ($t_{(38)} = 2.541$, $p = 0.015$, $\eta^2 = 0.145$). Boys compared to girls had higher average heart rate and physical activity level. There were no statistically significant ($p > 0.05$) and practically significant gender differences ($\eta^2 < 0.06$) for HR_A, PA_H a PA_{Sum} (Table 2).

The assessment of the relationship between physical activity levels and body composition of children showed only weak or very weak power of relation in most parameters (see Table 3). However, as seen in Figure 1 a moderate power of relation ($r_s = 0.526$, $p < 0.05$) was found between waist-to-hip ratio (WHR) and physical activity performed in the kindergarten (PA_H).

The associations between body composition and physical activity levels may be explained by a variety of factors. Such degree of association can be attributed to low sample size or to a large extent to data homogeneity. With respect to obesity (not found) classified according to BMI, or overweight (found in one child) data on body composition were homogeneous across the sample. This may indicate that somatic development at this age is determined predominantly by endogenous factors and not difference between lifestyles.

Discussion

Concerning anthropological parameters assessed irrespective of gender, average body height of children (BH) was 116.1 cm (SD = 6.0 cm) and average body weight (BW) was 21.3 kg (SD = 4.0 kg). According to WHO [24] norms for this age period, 7 children were found to have higher body weight and three children had lower body weight than standard body weight.

Mean body mass index value (BMI) was 15.7 $kg.m^{-2}$ (SD = 2.0 $kg.m^{-2}$). According to obesity classification based on BMI, six children were overweight and one child was underweight. What may be regarded as positive is the fact that no child was obese according to their BMI. However, this does not hold true for older children (Béderová 2003).

Mean skeletal mass (SMM) was 8.2 kg (SD = 1.5 kg) and mean fat-free mass was 17.3 kg (SD = 2.4 kg). Despite this, mean percentage body fat (PBF) was 18.2% (SD = 6.3%). Alarming with respect to WHO standards is the fact that percentage muscle mass was lower than reference WHO value in 21 children. Contrary to this, 19 children were found to have percentage body fat higher than reference norms.

Regarding nutritional status of children, mean protein mass (PM) was 3.4 kg (SD = 0.5 kg) and mean mineral mass (MM) was 1.2 kg (SD = 0.2 kg). In total, 13 children had deficient volume of protein mass, which may be attributed to lower degree of muscularity. Mean waist-to-hip ratio (WHR) indicative of abdominal obesity was 0.75 (SD = 0.04).

Monitoring lifestyle of children showed that average volume of daily physical activity (PA) performed in the kindergarten was 30 minutes (SD = 20.11 min). Mean volume of physical activity performed out of kindergartens during weekdays was approximately 72 minutes per day (SD = 28.06 min). Total volume of daily physical activity was 102 minutes (SD = 3.7 min). This shows that children engaged in 12 minutes less physical activity according to minimum daily physical activity level recommended by NASPE.

The response of child organism to physical activities was monitored by heart rate recorded during children's stay in kindergartens. The average heart rate of children was 119 bpm (SD = 7 bpm). We decided to monitor especially heart rate of children during structured physical activities, which showed that average heart rate was 131 bpm (SD = 10 bpm). Compared to findings reported by Kučera (Kučera 1991) who monitored heart rate of preschool children using telemetry, average heart rate of children in our study is lower by 42 bpm. According to NASPE guidelines accepted in both Czech Republic and Slovak Republic, a child should engage in at least 120 minutes of moderate to vigorous physical activity. The zone of medium intensity physical activity equivalent to 3-6 METs ranges from 135 bpm to 191 bpm. With respect to the heart rate range mentioned above, children in our study rarely performed physical activity at a required level of medium intensity.

Our results have revealed interesting findings. We have found a generally observed manifestation of the secular trend present in most developing countries. Children are getting taller and heavier at the same time, which has been confirmed by National Anthropometric Survey conducted nationwide in Slovak Republic since 1951 (Figure 2). On the other hand, we find it alarming and detrimental to the health of children that data do not correspond with the volume and intensity of physical activity, which is still considered to be an irreplaceable factor underlying their healthy development (Figure 3). Therefore, children tend to be taller and heavier, which makes them quit exercising.

Table 1. Comparison of body composition indicators of participants with respect to their gender

Variables		Mean	Standard deviation	Levene's Test for Equality of Variances		T-test for Equality of Means		η^2
				F	p	t	p	
Age (years)	G	5.9	0.43	1.064	0.306	-0.466	0.643	0.03 (small)
	B	5.8	0.57					
BH (cm)	G	115.0	5.81	0.147	0.703	1.579	0.119	0.036 (small)
	B	117.3	6.07					
BW (kg)	G	20.9	4.38	1.791	0.185	0.988	0.327	0.014 (small)
	B	21.8	3.46					
BMI ($kg.m^{-2}$)	G	15.7	2.35	3.893	0.053	0.216	0.830	0.001 (small)
	B	15.8	1.42					
SMM (kg)	G	7.8	1.40	0.149	0.700	2.437	0.017	0.081 (medium)
	B	8.6	1.49					
FFM (kg)	G	16.6	2.29	0.288	0.593	2.555	0.013	0.089 (medium)
	B	17.8	2.32					
PBF (%)	G	19.3	7.04	1.234	0.271	-1.499	0.139	0.032 (small)
	B	17.1	5.25					
WHR	G	0.75	0.04	0.142	0.708	-0.731	0.467	0.008 (small)
	B	0.74	0.04					
BMR (kcal)	G	728.1	49.4	0.294	0.589	2.541	0.013	0.088 (medium)
	B	758.6	50.2					
PM (kg)	G	3.22	0.46	0.078	0.780	2.571	0.012	0.90 (large)
	B	3.52	0.49					
MM (kg)	G	1.14	0.15	0.011	0.916	2.559	0.013	0.89 (large)
	B	1.24	0.16					

Note. G - girl; **F** - boys; **BH** - body height; **BW** - body weight; **BMI** - body mass index; **SMM** - skeletal muscle mass; **FFM** - fat free mass; **PBF** - percentage of fat mass; **WHR** - waist to hip ratio; **BMR** basal metabolic rate, **PM** - protein mass; **MM** - mineral mass; **t** - value of testing criterion in t-test; p - significance; η^2 - effect size

Table 2. Comparison of obejctivization parameters of physical activity of participants with respect to their gender

Variables		Mean	Standard deviation	Levene's Test for Equality of Variances		T-test for Equality of Means		η^2
				F	p	t	p	
HR_A (bpm)	G	118.3	6.9	0.017	0.896	1.041	0.305	0.028 (small)
	B	120.7	7.3					
HR_{PA} (bpm)	G	127.9	9.5	0,146	0.704	2.459	0.019	0.137 (medium)
	B	135.4	9.6					
PA_S (min)	G	23.4	10.5	5.467	0.025	2.541	0.015	0.145 (large)
	B	38.7	26.3					
PA_H (min)	G	73.8	28.9	0.256	0.616	-0.319	0.751	0.003 (small)
	B	70.9	27.7					
PA_{Sum} (min)	G	97.2	31.7	0.556	0.460	1.156	0.255	0,034 (small)
	B	109.6	36.0					

Note. G - girl; **F** - boys; $\mathbf{HR_A}$ - heart rate average; $\mathbf{HR_{PA}}$ - heart rate during physical activity; $\mathbf{PA_S}$- school physical activity; $\mathbf{PA_H}$ - home physical acti vity; $\mathbf{PA_{Sum}}$ - sum of physical activity; **t** - value of testing criterion in t-test; **p** - significance; η^2 - effect size

Table 3. Analysis of a relationship between physical activity and body composition indicators

Variables	HR_A (bpm)	HR_{PA} (bpm)	PA_S (min)	PA_H (min)	PA_{Sum} (min)
BH (cm)	-0.056	-0.131	0.203	0.105	-0.132
BW (kg)	-0.077	-0.026	0.078	0.067	-0.093
BMI ($kg.m^{-2}$)	0.008	0.031	0.000	0.023	0.002
SMM (kg)	-0.204	-0.112	0.221	0.143	-0.153
FFM (kg)	-0.208	-0.112	0.235	0.160	-0.153
PBF (%)	0.194	0.073	-0.285	-0.201	-0.074
WHR	-0.285	-0.213	0.526*	0.307	-0.182
BMR (kcal)	-0.204	-0.116	0.224	0.147	-0.153
PM (kg)	-0.219	-0.124	0.267	0.175	-0.166
MM (kg)	-0.062	0.001	0.144	0.156	-0.079

Note. BH - body height; **BW** - body weight; **BMI** - body mass index; **SMM** - skeletal muscle mass; **FFM** - fat free mass; **PBF** - percentage of fat mass; **WHR** - waist to hip ratio; **BMR** basal metabolic rate, **PM** - protein mass; **MM** - mineral mass; $\mathbf{HR_A}$ - heart rate average; $\mathbf{HR_{PA}}$ - heart rate during physical activity; $\mathbf{PA_S}$- school physical activity; $\mathbf{PA_H}$ - home physical activity; $\mathbf{PA_{Sum}}$ - sum of physical activity; * $p < 0.05$

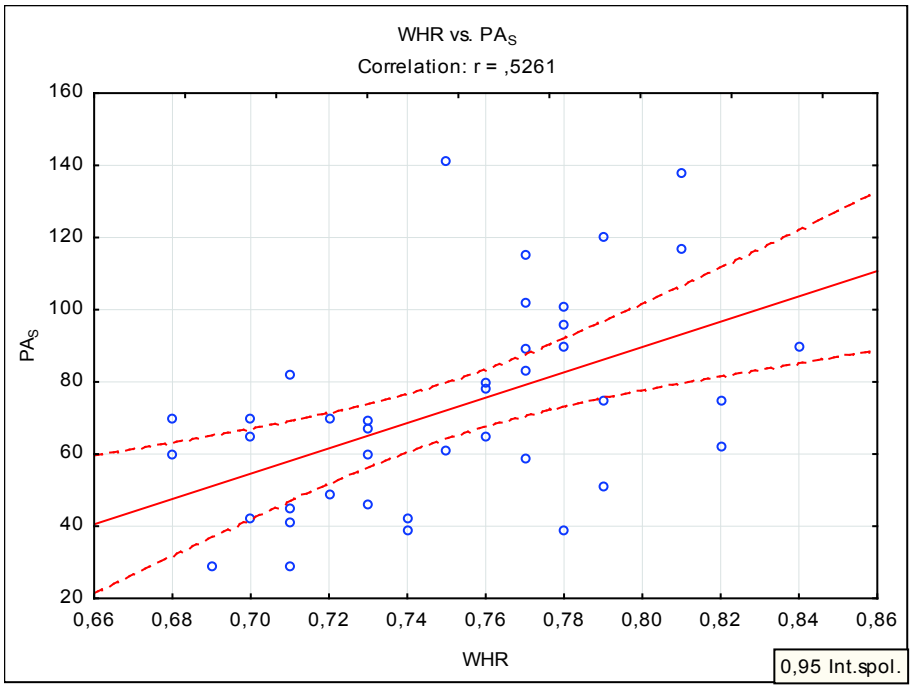

Figure 1. Anlysis of relationship betwen parameters waist to hip ratio and physical activity at kindergarden
Note. WHR - waist to hip ratio; **PA_S**- school physical activity

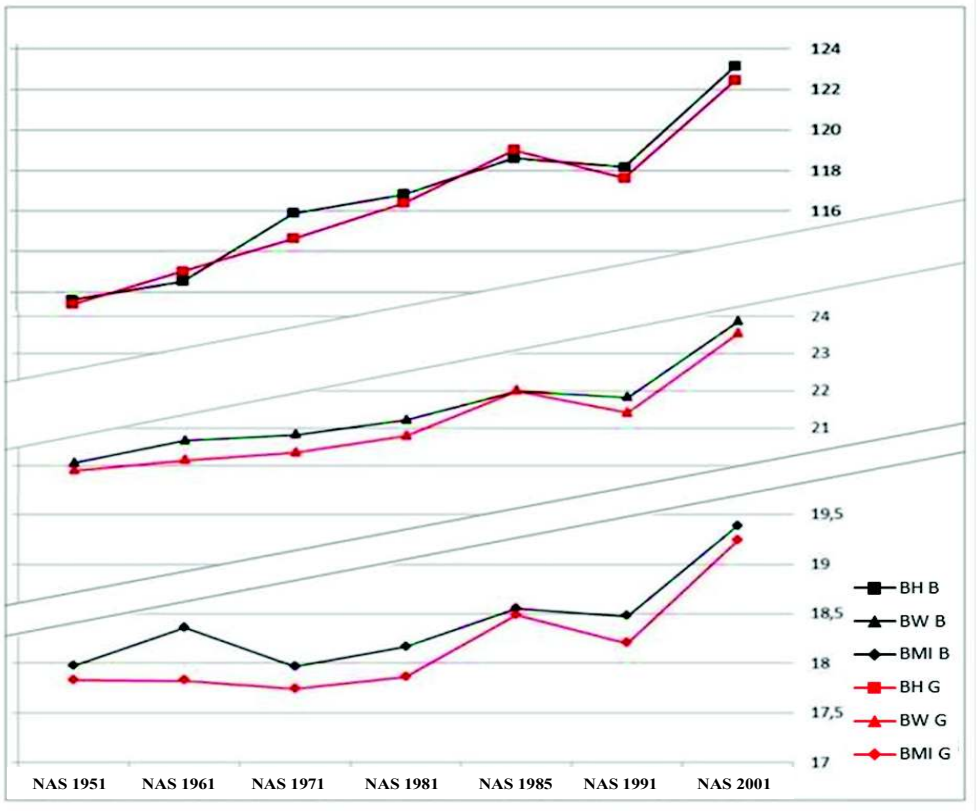

Figure 2. National anthropometric measurements
Note. BH- body height, **BW**- body weight, **B-** boys, **G**- girls, **BMI**- body mass index, **NAS**- national anthropometric survey

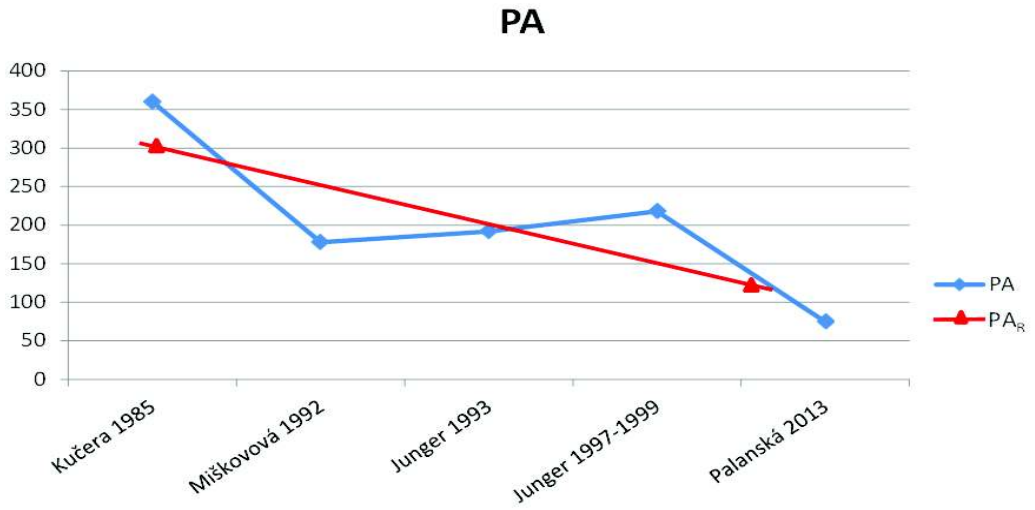

Figure 3. Physical activity of preschool children (daily average/min)
Note. **PA**- physical activity, **PA$_R$** – recommended physical activity according to Calzozari et al. (1985) – NASPE (2002)

Conclusions

1. Somatic development of the children studied corresponds with the secular trend confirmed by higher means for body height and body weight.
2. The analysis of body composition data has confirmed our personal experience in that somatic development of preschool children is still determined predominantly by endogenous factors and not by difference in their lifestyles.
3. Measures of somatic development are disproportionate to physical activity levels of children, which is regarded as an irreplaceable factor underlying their healthy development. However, physical activity level of children is gradually decreasing.
4. The volume of daily physical activity does not meet the minimum standard recommended by NASPE and average intensity of physical activity expressed by heart rate does not reach the medium intensity zone.
5. Average heart rate monitored during entire stay in the kindergarten is 20 bpm higher than resting heart rate of children.

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PREVENTION OF TRAUMATISM AND OTHER RISKS DURING PHYSICAL TRAINING LESSONS

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Demianchuk O., Modryk O., (2014) *Prevention of traumatism and other risks during physical training lessons.* Health Problems of Civilization 3 (8) p. 20-24.

Summary: Scientific and methodological literature is analyzed in the article, basic regulatory acts governing the issues of preservation of children's health are also considered; opinions are outlined and the reasons which , as the authors of the article believe, stipulate the current situation. Theoretical analysis of the problem of the sanatory program implementation in the modern school education is carried out. The results proving the advisability of usage of the Rufje test for the division of the children into the groups at the physical training lessons are set forth. Correctly developed and implemented technique of physical exercises at the physical training lessons and athletic training will allow overcome negative tendencies, to improve the children's health and to provide differentiated approach to the pupils at the lessons. Health is the state of complete physical, spiritual and social prosperity, but not only the absence of illnesses or physical disabilities. According to the definition of concept of health, by the concept of healthy lifestyle in the widest sense everything in human activities, that favors the preservation and strengthening of health, and everything, that assists a person to perform private and social functions, is being accepted. In specific biological-and-medical sense the healthy lifestyle includes in itself the harmonious way of work and rest combination, optimal nutrition, physical activities, hygiene keeping, the absence of harmful habits, positive attitude towards social surrounding and to life in general.

Key words: Rufje test, medical group, children mortality.

Introduction

A topicality of the problem of healthy lifestyle implementation in Ukraine is defined by extremely unsatisfactory main social and demographic index of the population's health state. In «Bloomberg» rating of the inhabitants health state of different countries, published in August 2012, Ukraine ranks 99 (between Iraq and Pakistan) among 145 other world countries. If to compare with other post Soviet countries: Georgia ranks 71, Russia – 97 (http://images.businessweek.com/bloomberg/pdfs). The key social and demographic factors are at the critical level: natural population reduction (per 1000 people in 2011 it made up 3,7 people) high level of mortality (14,6 people per 1000 people) low birth rate level, disease incidence high level . In Ukraine the index of infant mortality is twice higher than in the developed countries (Posylannia presydenta Ukrainy, 2012). In the subjective self-evaluation of the Ukrainians health rate negative characteristics are mentioned.

According to the data provided by the State Service for Youth and Sport in Ukraine, total population in Ukraine in 2011 45617542, the total number of those who were engaged in physical culture and sport made up only 6228945 people, that was 13,65 % (Ukrein sporting, 2012). At the end of 2011 the total of those who were going in for all kinds of health and fitness made only 4951946 (among them 2279347 were people of the age of 16-18 years old) (Statystychny shchorichnyk Ukrainy, 2012).

According to the data provided by World Health Organization total children mortality in the result of the accidents makes up 7,2 per 100 thousand of the boys and 22,8 per 100 thousand of the girls. The majority of the childrens' traumas younger than 13 year old happens at the school age during the games and sport activities (50 %); 30 % at home and 20 % — traffic accidents.

Despite the fact that regular physical activity and sport are beneficial and help to strengthen health, active physical exercises sometimes are connected with high risk of children and teens with high sensitivity to physical activity instant death (Orliaguet, Meyer, Blanot, Schmautz, Charron, Riou, Carli, 2001; Khodorivska, 2011). Protection of such children from extra risk very often needs certain restrictions of some kind of physical activity (Sirard, Pate, 2001). Although, potential efficiency of such measures depends on the defining of those people who are more or less risky (Bar-Or, Rouland, 2009).

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There were 13 fatal cases at the physical training lessons for the last 6 years. Analyzing the reasons of these cases we found out that only one case was caused by trauma. 12 twelve other cases were caused by children's CVD.

Essential changes began in September 2009. The Ministry of Health and Education of Ukraine defined Rufje tests as sustainable to define children readiness for physical training lessons (http://moz.gov.ua/uaportal/pre_20100706_0.html; moz.gov.ua/ua/main/press/?doklD =20700). Before the beginning of the academic year pediatricians carry out children medical examinations and on their results they divide them into the groups. There are no children who are released from the physical training lessons. Pupils with cumulative diseases or temporary problems go in for sport in a special group. The members of this group are defined by the pediatrician. The public resonance of this innovation cannot be compared to any other physical training pupils in the history.

The aim of the research is to analyze reliability and performance of the Rufje test and to establish efficiency of its application during the pupils division process into the groups for PT lessons.

Methods and materials of the research Rufje test is a small medical examination for a child that allows to establish the state of the child' heart. It is carried out by the next scheme. After 5-minute relaxation sitting on the chair the heart rate is taken during the 15 seconds (p1) and then a child crouches for thirty times for forty-five seconds. Immediately after crouching the heart rate is being taken for the first fifteen seconds (p2) and also during the last fifteen seconds (p3) of the first minute of the rest period. The results are estimated by the index defined by the formula:

*Index = (4*x (p*1 +* p*2 +* p*3) -200) / 10*

Index Rufje

less 0 – athletic heart;

from 0,1 to 5 - «excellent» the heart is in a very good state;

from 5,1 to 10 - «good» the heart is in a good state;

from 10,1 to 15 - «satisfactory» CVD of medium severity;

from 15,1 to 20 - «bad» CVD of high severity.

The children are divided into three groups only on the basis of the results of the Rufje test. The groups are: *main, group with reduced load and a special group (a group with special exercise load* (table 1).

Table 1. Characteristics of the groups for PT lessons

Name of the group	Criteria for the enrollment of the pupils into the group
Main group	Absolutely healthy children which after the medical check-up and Rufje test appear to have no problems. They go in for physical activity and can participate in cross-country races and competitions.
A group with reduced load	The children with slight deviations from the norm (1-2 degree diffuse goiter, fault in posture, 1-degree scoliosis) and Rufje index – lower than the norm. These children do sport according to the basic program but they are released from such physical loads as cross-country races and other sport events.
Special group	Here are the children whose state of health needs a special individual approach when defining a physical load for them. A PT teacher defines for them a special program. These children are included to the pertaining to the prophylaxy group of observation where their chronic pathology is observed.

Sometimes the state of the child allows his/her enrollment to the main group but according to the Rufje test the heart may not bear the load and that is a child is enrolled to the group with reduced load. Later the Rufje test is taken again – in a month or two.

Results of the research: we are having at our disposal the statistics provided by Ministry of Education the out-of-school and sport establishments on the 1st of January 2011. We have noticed the regularity — in those regions where children died during the PT lessons, the sport clubs make the least quantity (table 2).

Table 2. Quantity of children in sport clubs

Region	Q-ty of sport clubs	Children involved	Region	Q-ty of sport clubs	Children involved
Crimea	72	33,4%	Odesska	108	36,1%
Vinnytska	61	24,0%	*Poltavska*	*85*	*30,7%*
Volynska	63	34,0%	*Rivnenska*	*58*	*30,6%*
Dnipropetrovska	179	39,9%	Sumska	76	58,1%
Donetska	*147*	*34,5%*	Ternopilska	66	33,5%

Zhytomyrska	65	38,1%	Kharkivska	107	47,2%
Zakarpatska	48	35,3%	Khersonska	77	36,7%
Zaporiz'ka	81	36,3%	Khmelnytska	73	37,1%
Ivano-Frankivska	72	37,4%	Cherkasska	70	34,6%
Kyivska	89	45,2%	*Chernivetska*	*44*	*31,8%*
Kirovohradska	51	53,4%	Chernihivska	67	40,9%
Luhanska	108	41,7%	Kyiv	70	42,8%
L'vivska	*123*	*31,0%*	Sevastopol	13	44,3%
Mykolaivska	61	37,6%	Total	2134	37,5%

(*In bold are the regions where for the last year the children died during the PT lesson).*

According to the data of anonymous questionnaire conducted among the pupils and teens' parents, we received the following results:

- for 31% of the pupils their physical activity is limited by their walking from school to home;
- more than 1/3 of parents don't know anything what their children are doing after school;
- almost 45% of the pupils spend less than one hour a day in the open air;
- 1/4 of the parents «solve» the issue of visiting (better to say not visiting) the PT lessons by their children with the help of the certificates from the doctors or immediately with the PT teachers.

The statistics says: among the surveyed pupils of 15-16 years old 25% used alcohol drinks at the age of 13, 40% of the children at the age of 11–12 tried alcohol, and 20% of the sixth form pupils were once drunken. 20–25% of the youngsters began to smoke at the age of 11 or even earlier. Among the girls 25–40% first smoked at the age of 14–15. 8-26% of the teens were abusing drugs at the age of 13–16. The majority of the surveyed do sports less than a half of an hour or an hour per week. 75% spend watching TV from one to four hours. 65–90% sit at the computer from half an hour to three hours a day. About 60% of the parents and 40% of the mothers know little or nothing at all about how their children free time. We have cases, especially in big cities, when 38% of pupils are released from the PT lessons. There may be only reason defined: lack of fashion, wish and popularity of the PT lessons and general interest to go in for sport.

Every tenth school doesn't have gym. And 40% of the existing gyms do not meet modern requirements. Thus, about half of the pupils do not have an opportunity to have comprehensive PT lessons and to go in for sport.

State standards provided maximum physical load on a child. But a child does not need them. The PT lessons should be health-improving (Reznik 2011). Neither seconds nor kilometers can define physical state of a child, but it is a physical development that must do this, namely: weight and height. Development of the standards of the physical load at the PT lessons should be based first of all on the health indicators of the children and abilities of the child's body to fulfill them. According to the data of the research, only 30% of the children can fulfill these standards without any risk to their life. The processes of renewal of the fitness shape after fulfilling the standards are flowing in the norm only with 18–24% of the children. These are the data concerning the children which are absolutely healthy and have no diagnosis.

Discussion of the results: it is clear even for an outsider that such a situation is not normal but unfortunately, neither doctors nor PT teachers are not ready to express their opinions about the advisability of the Rufje test.

It is known that now this test can be taken in clinical conditions both with teens and adults which were checked-up and were recognized healthy. This test gives an opportunity to define functional characteristics of the cardiovascular system, in the other words, the level of the fitness of the heart in the process of selection of the students of the military schools or at the draft to the Army. But the question is whether this system is suitable for the pupils, especially junior ones?

In accordance with the recommendations of the WHO, when conducting the functional tests the load must not exceed 75% of the maximal possible load. It has been proved in practice that pulse frequency of 170 beats per minute testifies to the maximal load on the heart. When taking Rufje test a child has to crouch thirty times within 45 seconds. Doing this many adults and children have the heart rate up to 170 beats per minute. Some junior pupils can hardly bear such a testing. Rhythm disturbance and arterial tension hypotony may happen. Taking into account functional, and anatomical immaturity of the cardiovascular, nervous and vegetative systems as well as psychological factor during the Rufje testing, many specialists are apt to think that this test is not advisable and may be even risky for juniors. Sometimes children get pale, faint and this means that such an experiment for some of them may have rather negative results.

We suppose that evaluating Rufje test is necessary to take into account the methods of testing and age of the pupils. So, the pulse rate up to 12 years, instability of the neural processes with children of this age are often stipulate high Rufje index and this is considered to be the reason, though groundless, for the enrollment of a child to the group with lower level of load (Romaskevych 2011).

Age standards for the evaluation of the Rufje test are proposed in the scientific research conducted by A.A. Huseva, S.D. Poliakova and I.H. Korneieva. The research was conducted at the Federal Centre of Exercise Therapy and Sports Medicine of the Ministry of Health of Ukraine. The standards received are contained in the table 3.

Table 3. Evaluation of the Rufje test with children with consideration of age factor

Evaluation of the result	**Rated Rufje test according to age**				
	15 years and older	**13-14 years**	**11-12 years**	**9-10 years**	**7-8 years**
Not satisfactory	15	16,5	18	19,5	21
Poor	11-15	12,5-16,5	14-18	15,5-19,5	17-21
Satisfactory	6-10	7,5-11,5	9-13	10,5-14,5	12-16
Good	0,5-5	2-6,5	3,5-8	5-9,5	6.5-11
Excellent	0	1,5	3	4,5	6

The parents who worry that their children may have health problems, need to know that Rufje index 1-6 occurs with people with trained heart who seriously go in for sport. If the index is 7-15 – they are practically healthy children but they move little in their everyday activity. They are the children for whom physical training lessons could be highly effective. The children having index, need serious medical examination, and after excluding serious illnesses they are also recommended physical exercises but under the doctor's control. Healthy but poorly fit pupils the Rufje index improves very quickly if they run, move a lot, if they like cycling and games in the open air. Unfortunately, today thanks to bureaucrats' ability, more than 80 % of children are factually recognized as having heart problems and are almost released from the PT lessons.

And what is worse, there are not many absolutely healthy pupils, and near 30% of the future first-graders have some chronic illnesses. The doctors have also underlined that according to the results of the Rufje test applied for the evaluation of the heart performance at the physical load, 42% of the pupils should be enrolled to the special groups.

Conclusions

With an account of all abovementioned we can draw such conclusions:

1. The system of physical control and regular medical check-ups of the pupils need radical improvement. These tragic cases are also the reasons to state that parents know little about the state of health of their children. And even when they know about the problems, they do not inform the school.
2. It is necessary to provide a differentiated approach to the pupils at the PT lessons and to make a studying process individual. In the course of preparation of the specialists on physical culture and sport it is necessary to increase a number of classes devoted to teaching biology, physiology and medicine. Retraining of the specialists is also a must.
3. It is also necessary to increase a quantity of the sport competitions held at different levels, and together with sport organization to conduct master-classes involving in this activity leading specialists of our country, and to conduct lessons on those sports which are interesting to pupils.

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THE RELATIONSHIP BETWEEN OBESITY AND THE INCIDENCE OF INFERTILITY IN WOMEN

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Summary: A significant increase in the incidence of obesity, which has taken place in recent years caused that began to talk about the epidemic of obesity. This problem is characteristic of highly developed countries. Increasingly, also occurs in developing countries, including Polish. It occurs in all age groups and in almost all social groups. The disease is currently diagnosed in almost 25% of the Polish population. Increasingly, it is also diagnosed in young women and pregnant women. The literature increasingly emphasized the importance of obesity in disorders of insemination and proper implantation the fertilized ovum. For women who are overweight and obese, more often than women with normal body weight, comes to ovulation disorders and disturbances in the proper implantation of the fertilized ovum. These disorders result from the accumulation of adipose tissue and hormonal disorders resulting from them. Influence on fertility of women have not only expressed as their body weight BMI, but also as the content in the body fat and its distribution. The higher the fat content in the body making it harder and longer may be infertility treatment. It also noted the relationship between fat distribution and duration of treatment of infertility and its effect. More and more often also emphasized the importance of incorrect diets in young women as a factor in reducing fertility. This article is an attempt to collect and characterize the major causes of infertility seen in young women who are overweight or obese.

Key words: overweight, obesity, infertility, young women, BMI, adipose tissue

The literature increasingly emphasized the importance of obesity in disorders of insemination and proper implantation the fertilized ovum. These disorders result from the accumulation of adipose tissue and hormonal disorders resulting from them. More and more often also emphasized the importance of incorrect diets in young women as a factor in reducing fertility. This article is an attempt to collect and characterize the major causes of infertility seen in young women who are overweight or obese.

Obesity epidemiology

The most recent epidemiological data relating to the incidence of obesity show that fairly quickly it has become a significant problem for modern medical practice (Rich-Edwards et al. 2002). According to specialists, obesity has taken the size of the global epidemic which generates a significant threat to the health of people suffering from it (Bebelska et al. 2011).

The incidence of obesity occuring in the population of both women and men has escalated over the last decade (Jarvie, Ramsay 2010). The increase in the incidence of obesity occurence is noted in both higlhy developed and developing countries (Pupek-Musialik 2008). Excess weight and obesity are defined by means of the BMI (Body Mass Index) and now concern each age group regardless of gender or race.

In the year 2002, 1.4 million people were diagnosed with excess weight or obesity (BMI > 25 kg/m^2) around the world, whereas the problem of obesity (BMI > 30 kg/m^2) affected 365 million people (Wang, Beydoum 2007). Five years later (2007), more than 2 million people were diagnosed with excess weight or obesity. The number of obese people at this time reached 523 million (Kłosiewicz-Latoszek 2010). On a global scale, obesity occurs now at 7.7% of men and 9.8 % of women (Doak et al. 2012). According to experts' estimates by 2015 the number of obese population will have exceeded 700 million people worldwide (Kłosiewicz-Latoszek 2010).

The largest number of people with excess body weight is currently residing in the United States (Wang, Beydoum 2007). In 2010, the problem of overweight applied to 32% of the adult population of this country whereas further 34% of adults were obese. At the time, the percentage of children and adolescents suffering from

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obesity was also high (17%). According to estimates, by 2015 the problem of being overweight will have affected 33% of adult Americans, and obesity will be a hindrance for nearly half of the U.S. population (42%) (European Nutrition and Health Report 2009).

Also, the problem of excess weight and obesity is becoming increasingly important on the European continent (Berner-Trąbska et al. 2009). In the year 2009, 50% of the European population was diagnosed with excess weight. Obesity concerned another 30% of Europe's residents at the time. Obesity is a disease that occurs more frequently among women (22% of inhabitants of Europe) than men (15% of Europe's population). This problem deeply affects the residents of the UK, Greece and Spain. Among the countries of the European continent with the lowest percentage of people with excess weight and obesity are the Scandinavian countries (Denmark, Sweden, Norway) and France. Escess weight occurs in their case, among 35-41% of men and among 20-24% of women while obesity is diagnosed among 7-9% of men and among 6-8% of women (James 2009).

Over the last decade, escess weight and obesity have become a significant public health problem in Poland. The results of research conducted in 2000 by National Food and Nutrition Institute in Warsaw revealed that the problem of overweight affects as many as 41% of men and 28.7% women (WOBASZ 2005). It is worth emphasizing that the problem of body mass irregularity resulting from its excess affects more often women of reproductive age (10-15%) and pregnant women (10-20%) (Kanadys 2002).

Fertility of women

With the increasing industrialization of many countries and the development of civilization connected with it, the incidence of certain lifestyle diseases has increased significantly among their inhabitants (Hajduk 2012). The development of these diseases largely depends on such factors as lifestyle, environment and pollution, social factors, work performed and the conditions in which it takes place, the availability and level of health care and genetic factors. These factors also affect varying degrees of female fertility and its disorders.

Fertility is defined as the ability to conceive, or fertilization of the ovum and its proper implantation. It is an extremely complex phenomenon, which is subject to various processes both internal as well as external. Female fertility disorders and infertility among women represent a growing problem in many highly developed as well as developing countries. The scale of the problem made the WHO (World Health Organization) already in the 1980's recognize infertility as a social disease, which, according to WHO's estimates, affects 13 -15% of couples in reproductive age.

In contrast, the results that were obtained during the studies of Boivin et al. in 2007, showed that infertility occurs in about 9 % of couples in reproductive age. In highly industrialized countries, the incidence of this phenomenon ranges from 3.5 % to 16.7 % of couples, while in developing countries, the incidence of infertility ranges from 6.9 % to 9.3 % of couples in reproductive age. According to other researchers, this phenomenon affects about 16 % of couples (Hajduk 2012).

Unfortunately, the precise size of infertility phenomenon is impossible to determine. This is due not only to the fact that some couples struggling with this problem are not aware of it, but also due to the fact that some couples who have trouble with conception for all sorts of reasons do not report it to specialists.

Experts more and more frequently emphasize the link between lifestyle and nutrition and fertility, especially among women.

The impact of obesity on reproductive capabilities of women

The main reason for the body mass irregularity is an oversupply of energy exceeding the body's demand. This excess energy, if not used by the body to meet its current energy needs is deposited in the body as fat. Along with the increase in adipose tissue the person develops excess weight and obesity.

According to researchers, obesity poses a significant threat to the proper functioning of the reproductive processes of women as well as men (Fitzsimons, Modder 2010). The relationship between excess body weight and regularity of reproductive processes is noted mostly among young women (Hofny et al. 2010).

Excessive body weight occupies a very important place not only in the onset of lifestyle diseases, but also in the development of reproductive dysfunction. The researchers emphasize that abdominal obesity has a particularly adverse effect on women's fertility disorders (Greer et al. 2009). This is due to the fact that the adipose tissue is not only a kind of "reservoir" of energy. It is also a very active endocrine organ. Synthesis of estrogen takes place in it. A large amount of fat in the organism elongates its exposure to estrogen released by the adipose tissue. In addition, obesity leads to the development of the menstrual cycle disorders, more frequent occurrence of anovulatory cycles than it is with women of normal body mass, lower reproductive potential and the increase in the risk of miscarriage (Sarfati et al. 2010; Demissie, Milewicz 2003).

Reduced fertility associated with excessive weight gain is also associated with impaired secretion and action of hormones. This disorder refers mainly to leptin, resistin, ghrelin and adiponectin. Hormonal disorders lead to disturbances in the growth and maturation of the follicle, the implantation of the fertilized ovum and embryo development (Moschos et al. 2002).

Many times a relationship between BMI and the possibility of becoming pregnant in a group of young women treated for infertility was shown. Patients with a BMI in excess of the values specified for normal body weight were characterized by a lower concentration of circulating Sex Hormone Binding Globulin (SHBG). High BMI was also correlated with an increased estradiol fraction circulating in blood of these women (Demissie, Milewicz 2003).

The researchers also emphasize the important relationship between BMI and the growth hormone secretion (Iranmanesh 1991). The higher the value of the patient's BMI, the lower rigor of the growth hormone is recorded. The researchers also noted that with the increase in BMI of 1 kg/m^2 6% reduction in the secretion of this hormone is recorded. It should be emphasized that growth hormone plays a vital role in the whole process of procreation. It is in fact responsible for the correct and proper action and secretion of sex hormones, which in turn are responsible for the production and maturation of both sperm and ova.

In the opinion of Rich - Edwards et al (2002) the relationship between BMI and prolonged inability to become pregnant in the group of women diagnosed with infertility is clear. They attribute the existence of this relationship to the previously characterized hormonal changes which consequently lead to ovulation disorders. The results of their observations showed that ovulation disorders occur in 25% of women whose BMI was equal to or exceeded 25 kg/m^2.

There have been reports (Wickiewicz, Zimmer 2008), according to which the main cause of infertility among women with excess body weight is believed to be in the aforementioned insulin resistance and hyperinsulinemia. According to the researchers, they are responsible for hyperandrogenemia and stimulating the ovaries to produce ovarian androgens. Prolactinaemia, which is strictly associated with obesity, also, according to the researchers, is the cause of the ovulation disorders occurrence.

The results of research conducted by Chavarro et al (2007) showed a relationship between the diet of young women and their fertility. They described the characteristics of the nutritional model , which in their opinion may have a significant impact on reducing the infertility risk which is a consequence of ovulation disorders. The results they received allowed us to determine that the appropriate eating habits referred to as the "fertility diet" are associated with a reduced risk of infertility in 69% of patients undergoing the study in which they were proposed to alter eating habits.

Increasingly the impact of insulin sensitivity becomes highlighted which very often is closely related to body weight and the impact the diet has on fertility of young women (Kitabchi 2005). Insulin resistance resulting from excessive weight and poor diet leads to ovulation disorders, which in turn hinders fertilization. Therefore, according to experts a change in eating habits, diet supplementation in the micro and macroelements and the reduction or weight control can have a positive impact on the fertility of young women.

It should be noted, however, that excess weight and obesity are not factors lowering the fertility of women in a sustainable manner. Research results carried out Elnashar and Badawy (2011) have shown that already 5% weight loss in relation to the initial value contributes to a slow standardization of the menstrual cycle. Such a decrease in body weight with some patients treated for infertility also contributed to reduction in the incidence of anovulatory cycles. This means that women suffering from excess weight or obesity who are planning to raise their own family or expanding the already existing one, through a change for a lighter, less caloric diet and regular physical activity can fulfill their dream.

Both obesity and infertility are a growing social problem. Therefore, the international actions should concentrated on expanding information about these disease and popularizing them. There is also need to preventing and effectively treating obesity and infertility.

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TYPES OF LEISURE TIME ACTIVITIES AMONG LAJKONIK SNACKS COMPANY EMPLOYEES IN SKAWIN

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Summary: Aim of study. The aim of this study is to evaluate the size and the types of leisure-time activities with special regard to health-oriented behaviors among blue-collar and white-collar workers of the snacks company "Lajkonik" in Skawin. Research material and methods. Questionnaire survey using original survey questionnaire was conducted among 60 people: 30 blue-collar and 30 white-collar workers of both sexes. The age of the respondents ranged between 18 and 65 years. The survey questions concerned: amount of leisure time, preferred types of health-oriented leisure activities, people (friends, family) who join respondents in leisure activities, most frequent leisure places and activities performed by respondents during leisure time. Chi-squared test was used to compare employees' preferences and leisure time habits.Findings. The survey showed that leisure time is seen as desired by employees – a decided majority of respondents felt the want of leisure time. It was observed that there was a difference between leisure time activities preferred by blue-collar workers and white-collar workers – white-collar workers preferred physical activities.
Conclusions. In comparison with blue-collar workers, white-collar workers more frequently chose active leisure pursuits, in particular qualified tourism and physical recreation whereas blue-collar workers participated in parties and social gatherings more.

Key words: work, leisure time, health, tourism, recreation

Introduction

Leisure time has accompanied people since the beginning of times. Leisure time habits play an important role in health promotion. Over the centuries leisure time activities, their amount and importance have undergone significant changes. The thing that has not changed is their existence essential for mental and physical health (Izdebska 1978, Kamiński 1965, Kędzior, Wawrzak-Chodaczek 2000, Winiarski 2011, Wnuk-Lipiński 1972). Researchers believe that functions of leisure time are as follows: energizing, developing, socializing, integrating and entertaining (Bombol, Dąbrowska 2003, Baudrillard 2006).

Literature indicates that there were many researchers who analyzed issues concerning leisure time habits (Przecławski 1993, Wolańska 1985, Jung 1989). Dębski (2009) presented research findings concerning "Leisure time habits among Gdańsk-Gdynia-Sopot Tricity inhabitants" conducted by the Regional Volunteer Centre in Gdańsk. The aim of this research was to define leisure time activities and how they corresponded to people's cultural and sports and recreation interests.

In turn, Kacperczyk (2004) from the Univeristy of Łódź conducted research which focused on activities performed by Łódź inhabitants during work and household chores-leisure time. The aim of Kacperczyk's experiment was to explore inhabitants' attitudes towards cultural offer presented by cultural institutions, local authorities and foundations for promotion of Łódź.

The aim of the study was comparative analysis of leisure time activities among blue-collar and white-collar workers of the foodstuffs company Lajkonik Snacks GmbH Sp. k. in Skawin. In order to achieve the above-mentioned aim the following research questions were asked:

1. Where and who do respondents usually spend their leisure time with?
2. What are respondents' preferred leisure time activities?
3. What are the differences in leisure time habits of blue-collar and white-collar workers?

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Tables: 11, **Figures**: 2, **References**: 19, **Full text PDF** www.hpc.edu.pl

Material and methods

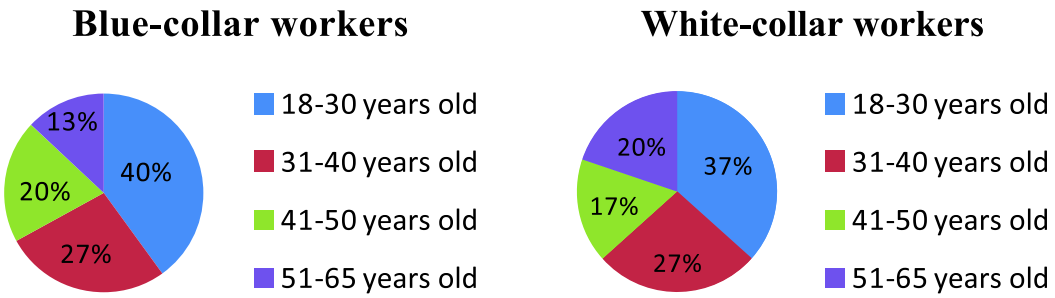
The research focused on the evaluation of leisure time habits among the employees of the foodstuffs company Lajkonik Snacks GmbH Sp.k. in Skawin. The research included the analysis of: jobs held by respondents, environmental conditions, age, assets, family situation and other factors affecting amount of leisure time and how it can be used. Respondents' individual preferences concerning leisure time habits were also analyzed.

For the purpose of research conducted in October 2013 a group of 60 employees between 18 and 65 years was used. Main sampling criterion was job held by respondents therefore 30 blue-collar workers and 30 white-collar workers were invited to participate in the research.

The research used original questionnaire survey. The questionnaire consisted of respondent's particulars and 11 questions which required one or several answers. The original survey questionnaire was used to help gain information about leisure time activities and show differences in this area resulting from jobs held by respondents. Questions included in the survey questionnaire concerned: amount of leisure time, preferred health-oriented leisure activities, information about where and who respondents spend their leisure time with. Chi-squared test was used to compare employees preferences concerning leisure time activities. Statistical significance level was: $p \leq 0,05$ (Ryłko 1989).

Findings

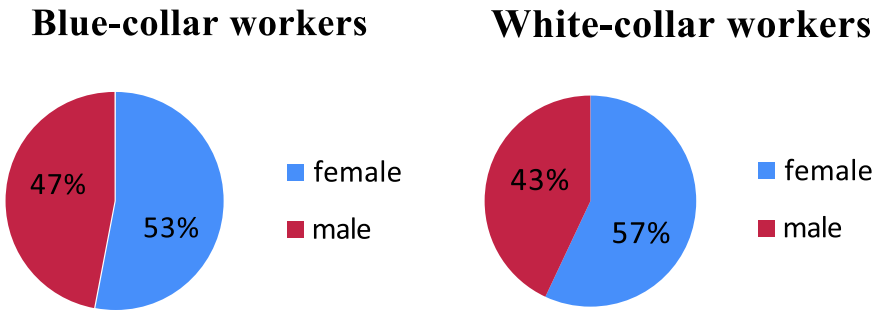
For the purpose of this research four age groups were defined for both sample groups (18-30; 31-40; 41-50; 51-65).



χ^2=0,957; df=3, p=0,8115

Figure 1. Age groups – all respondents

It was indicated that both blue-collar and white-collar workers represented similar percentage in each age group, and observed differences were not statistically significant (Figure 1).



χ^2=0,135; df=1, p=0,712

Figure 2. Gender – all respondents

In terms of gender, in both groups the percentage of females was higher but the differences were not statistically significant (Figure 2).

Table 1. Respondents' leisure time on working days

How much leisure time do you have on working days?	Blue-collar workers		White-collar workers	
	Number of people	%	Number of people	%
I Don't have	5	17	3	10
up to one hour	6	20	8	27
1-3 hours	12	40	14	47
3-6 hours	6	20	3	10
over 6 hours	1	3	2	6

only one answer could be chosen

χ^2=5,619; df=4, p=0,2294

(Table 1) 43% of all respondents had up to 3 hours of leisure time on working days but 13% of respondents claimed that they did not have any leisure time whereas 20% of respondents enjoyed over 3 hours of leisure time. No statistically significant differences were observed between blue-collar and white-collar workers as far as amount of leisure time on working days is concerned.

Table 2. Respondents' leisure time on holidays

How much time do you have on holidays?	Blue-collar workers		White-collar workers	
	Number of people	%	Number of people	%
I Don't have	1	3	1	3
up to one hour	4	13	1	3
1-3 hours	4	13	3	10
3-6 hours	10	34	11	37
over 6 hours	11	37	14	47

only one answer could be chosen

χ^2=4,733; df=4, p=0,1923

(Table 2) On holidays 35% of all respondents had 3-6 hours of leisure time and 42% of respondents had over 6 hours of leisure time. Blue-collar workers declared a little less leisure time on holidays but the differences were not statistically significant.

Table 3. Leisure places chosen by respondents

Where do you usually spend your leisure time?	Blue-collar workers		White-collar workers	
	Number of people	%	Number of people	%
at home	21	70	17	57
outside the house but within the place of residence	3	10	12	40
outside the place of residence	6	20	1	3

only one answer could be chosen

χ^2=9,392; df=2, p=0,0091

(Table 3) Both blue-collar and white-collar workers of Lajkonik company preferred to spend their leisure time at home (70% and 57% respectively). It was observed that blue-collar workers chose to leave their places of residence more often (20%). Differences between the two groups in preferred leisure places were statistically significant.

Table 4. Respondents' favourite leisure activities

What are your favourite leisure activities?	Blue-collar workers		White-collar workers	
	Number of people	%	Number of people	%
Tourism	17	57	26	87
Physical recreation	11	37	18	60
Means of transport	15	50	21	70
Cultural institutions	1	3	7	23
Self-education (not connected with career; on their own initiative; in fields of culture, arts, science)	2	7	4	13
DIY (carpentry, smithery, locksmithing, crochet, embroidery, sewing)	7	23	15	50
Amateur breeding (animal and plant breeding)	5	17	9	30
Social activity (acting for society, apart from duties at work or at home)	0	0	7	23
Social life (social gatherings, parties)	13	43	10	33

many answers could be chosen

χ^2=36,919; df=8, p=0,001

There were clear statistically significant differences between sample groups in terms of participation in tourism and physical recreation. The research showed that more white-collar workers than blue-collar workers chose these types of activity (table 4). Among white-collar workers 87 % declared going in for tourism and 60% for physical recreation. Among blue-collar workers it was 57% and 37% respectively.

Table 5. Types of tourism among respondents

If you go in for tourism, choose the type:	Blue-collar workers		White-collar workers	
	Number of people	%	Number of people	%
Heritage tourism (discovering new elements of environment, rituals and lifestyles)	2	7	5	17
Qualified tourism (skiing, snowboard, climbing, diving, canoeing, yachting, cycling etc.)	4	13	12	40
Recreation tourism (holidays, weekend trips, cycling trips)	13	43	22	73
Health tourism (sanatoriums, health-resorts)	0	0	1	3
Religious tourism (pilgrimages, visiting holy sites)	7	23	1	3

many answers could be chosen

χ^2=9,516; df=4, p=0,0494

There were clear statistically significant differences between sample groups in terms of preferred types of tourism. The most favorite types of tourism among white-collar workers were qualified tourism (40%) and recreation tourism (73%) whereas blue-collar workers chose recreation tourism (43%) and religious tourism (23%) (table 5).

Table 6. Frequency of travel – all respondents

How often do you travel?				
		several times a week	several times a year	less often
Qualified tourism	Blue-collar workers	2	3	1
	White-collar workers	4	6	2
Recreation tourism	Blue-collar workers	3	6	5
	White-collar workers	5	7	10

many answers could be chosen

qualified tourism χ^2=3,000; df=2, p=0,2231
recreation tourism χ^2=3,442; df=2, p=0,1788

There was similar frequency of travelling among both groups of respondents. Half of respondents travelled several times a year, and as often or less often they participated in camping, cycling trips or holidays. Differences between the two groups were not statistically significant. (Table 6).

Table 7. Types of recreation tourism among respondents

If you go in for recreation tourism, choose the type:	Blue-collar workers		White-collar workers	
	Number of people	%	Number of people	%
A walk in the open air	12	40	17	57
Cycling	10	33	17	57
Working in the country-side	14	47	12	40
Aerobics	3	10	2	7
Training at the gym	4	13	1	3
Swimming	9	30	19	63
Jogging	0	0	3	10
dancing	0	0	2	7
other	12	40	3	10

many answers could be chosen

χ^2=17,905; df=8, p=0,0219

The research and the findings show that respondents of both groups chose different forms of physical recreation. Considerable and statistically significant differences are observed between blue-collar and white-collar workers in terms of their attitude to going for a walk, swimming or cycling. Among white-collar workers 57% declared walks in the open air, 63% swimming and 57% cycling. Among blue-collar workers it was 40%, 30% and 33% respectively (table 7).

Table 8. Amount of time devoted to physical recreation – all respondents

How much time do you devote to recreation?				
		several times a week	several times a month	Less often
cycling	Blue-collar workers	2	3	5
	White-collar workers	5	8	4
swimming	Blue-collar workers	1	4	4
	White-collar workers	1	12	6
working in the country-side	Blue-collar workers	9	5	0
	White-collar workers	7	5	0
A walk in the open air	Blue-collar workers	8	4	0
	White-collar workers	11	6	0

Multiple answers could be chosen

cycling χ^2=5,175; df=2, p=0,0752
swimming χ^2=6,000; df=2, p=0,0497
working in the country χ^2=0,571; df=1, p=0,4496
strolling in the open air c^2=1,484; df=1, p=0,2230

It was indicated that majority of white-collar workers declared cycling several times a week or several times a month. Blue-collar workers showed less interest in this activity but differences between the groups were not statistically significant.

More than twice as many white-collar workers chose swimming (table 7) and much more often than blue-collar workers (table 8). Differences between sample groups were statistically significant. There were no statistically significant differences in amount of time devoted to spending time in the country between respondents of both groups who declared this activity. There were also no statistically significant differences between the two groups in amount of time devoted to going for a walk in the open air.

Table 9. The amount of leisure time devoted to the media – in general

How much leisure time do you devote daily to the media listed below?							
			not at all	up to 1 hour	from 1 to 3 hours	from 3 to 6 hours	over 6 hours
the Internet	Blue-collar workers	Number of people	6	14	7	1	2
		%	20	47	23	3	7
	White-collar workers	Number of people	1	17	11	1	0
		%	3	57	37	3	0
the press	Blue-collar workers	Number of people	12	18	0	0	0
		%	40	60	0	0	0
	White-collar workers	Number of people	13	17	0	0	0
		%	43	57	0	0	0
books	Blue-collar workers	Number of people	14	16	0	0	0
		%	47	53	0	0	0
	White-collar workers	Number of people	8	18	3	1	0
		%	27	60	10	3	0
radio	Blue-collar workers	Number of people	8	9	4	9	0
		%	27	30	13	30	0
	White-collar workers	Number of people	5	12	9	2	2
		%	16	40	30	7	7
TV	Blue-collar workers	Number of people	3	12	11	3	1
		%	10	40	37	10	3
	White-collar workers	Number of people	2	10	18	0	0
		%	7	33	60	0	0

Respondents could choose more than one answer.
Leisure time spent on the Internet χ^2=6,750; df=4, p=0,1496
Leisure time spent on reading the press χ^2=0,135; df=1, p=0,7125
Leisure time spent on reading books χ^2=8,722; df=3, p=0,0332
Leisure time spent on listening to radio χ^2=9,498; df=4, p=0,0497
Leisure time spent in front of the TV χ^2=6,071; df=4, p=0,1938

It was observed, that the majority of respondents used the Internet, whereas at least every fifth person working as a blue-collar worker did not do that, but the difference between the blue- and white-collar workers was not statistically significant. Respondents were very reluctant to read the press and newspapers, and over 40% both the blue-, and white-collar workers did not read the press at all. Nearly half of the blue-collar workers did not read books at all. The people surveyed often listened to radio mainly for up to 3 hours a day. Not many respondents resigned from watching TV. Numbers indicate, that about 96% of all workers devoted up to 3 hours a day to watching TV (Table 9).

Table 10. Frequency of visiting cultural institutions by respondents

How often do you visit cultural institutions?						
			once a week	once a month	once a year	not at all
theatre	Blue-collar workers	Number of people	0	0	5	25
		%	0	0	17	83
	White-collar workers	Number of people	0	0	10	20
		%	0	0	33	67
philharmonic	Blue-collar workers	Number of people	0	0	0	30
		%	0	0	0	100
	White-collar workers	Number of people	0	0	0	30
		%	0	0	0	100
museum	Blue-collar workers	Number of people	0	0	7	23
		%	0	0	23	77
	White-collar workers	Number of people	0	0	9	21
		%	0	0	30	70
exhibitions	Blue-collar workers	Number of people	0	0	8	22
		%	0	0	27	73
	White-collar workers	Number of people	0	0	11	19
		%	0	0	37	63

Respondents could choose more than one answer.
The theatre plays χ^2=3,75; df=1, p=0,0528
Visiting museums χ^2=0,634; df=1, p=0,4255
Taking part in exhibitions χ^2=1,291; df=1, p=0,2557

Based on the survey results it was established that workers of Lajkonik did not go to the theatre at all, or did it very rarely. It was observed, that this way of spending leisure time once a year was chosen by 17% of the blue-collar workers, and 33% of the white-collar workers. The survey also showed, that none of respondents went to the philharmonic in their leisure time. 23% of the blue-collar workers, and 30% of the white-collar workers once a week went to the museum. Similarly, representatives of the two surveyed groups rarely visited exhibitions. (Table 10).

Table 11. Leisure time devoted to parties, or social contacts

How often do you go to parties, or devote your leisure time to social contacts?					
		every day	a few times a week	a few times a month	less frequently
disco	Blue-collar workers	0	0	2	15
	White-collar workers	0	0	1	6
clubs/cafes	Blue-collar workers	0	0	4	13
	White-collar workers	0	0	5	10
meeting friends	Blue-collar workers	0	5	14	5
	White-collar workers	0	3	9	18
meeting family	Blue-collar workers	7	6	15	3
	White-collar workers	1	16	11	2

Respondents could choose more than one answer.
Leisure time spent in a disco χ^2=14,5; df=1, p=0,0001
Leisure time spent in a club or café χ^2=1,1; df=1, p=0,2942
Leisure time spent with friends χ^2=13,5; df=2, p=0,0011
Leisure time spent with family χ^2=9,847; df=3, p=0,0199

Based on results of the survey it was revealed, that respondents working physically more often than the white-collar workers chose parties, and social contacts, such as meetings and discos in their leisure time. differences between the groups surveyed are statistically significant (Table 11). It was indicated, that a similar number of the blue-, and white-collar workers visited clubs, and cafes. People working physically devoted leisure time to social contacts more often (a few time a week, or a month). In this example, differences are statistically significant. Regardless the character of work performed, workers took part in family meetings.

Discussion

One can suppose, that there are differences in ways in which the blue-, and white-collar workers spend their leisure time. It seems like the blue-collar workers, who are tired after an eight-hour work, more often choose the passive forms of relaxation, whereas the white-collar workers prefer the active recreation.

About 13% of all workers surveyed did not have leisure time during the working days at all, and slightly more people had up to 1 hour of leisure time (23%). During days free of fork, the white-collar workers had more leisure time – almost half of them had more than 6 hours of leisure time a day. One can suppose, that employees with children, especially the small ones and school-aged, have more responsibilities, and as a result, they have less leisure time compared to employees who are alone, childless, or have adult children. Another differentiating factor may be the place of residence of workers. Employees living in rural areas in private houses have more responsibilities, such as domestic care, and frequently farm work (Marcinkowski 2003).

The most frequently the surveyed employees spent their leisure time at home (70% of the blue-collar workers, and 57% of the white-collar workers. The white-collar workers, who like spending their leisure time outside, spent it mainly in their place of residence (40%), whereas the blue-collar workers – outside their place of residence (20%).

The statistically significant differences between the groups surveyed occurred also in terms of preferences concerning forms of spending leisure time. The vast majority – 87% of the white-collar workers reported the fondness of tourism (the blue-collar workers – 57%). The difference is visible also in the type of tourism. The blue-collar employees chose the recreational, and religious tourism, whereas the white-collar workers more often chose the qualified, and recreational tourism. Low popularity of skiing can be explained by the low level of the employees' advance in skiing, and its high costs (Kalecińska 2003).

Walks in the open air, cycling, swimming, working in the garden plots were the most popular types of active recreation both among the blue-collar- , and white-collar workers. Similar conclusions are presented in the research by Kalecińska (2003). Studying forms of the family recreation she stated, that although there is a diversity of recreational possibilities, walks (which were chosen by 74% of parents, and 46% of children), and cycling together are still the most popular among families. This fact is also proven in studies by Nałęcka (1996) and Janowska (1996).

Data from Table 4 indicate a certain regularity: definitely more white-collar workers chose different forms of spending leisure time – the blue-collar workers gave 71 votes, and the white-collar workers gave 117 votes. These results prove, that the white-collar workers prefer the active recreation. Half of the surveyed employees (from both groups), who show fondness of tourism, carried out qualified tourism activities a few times a year, and similarly frequently, or more rarely the recreational tourism.

Half of the white-collar workers indicated, that they like do-it-yourself activities, and other forms of amateur technical activities. It can be supposed, that employees tired of intellectual work prefer to perform do-it-yourself activities, as well as handicrafts.

The proportions are similar in comparison of both groups in terms of amateur breeding. Representatives of both groups were unanimous when it comes to their interest in the media. The majority declared that they use the Internet and watch TV for 1 hour a day. Nearly a half of the white-collar workers does not read the press, and every four person does not read books at all.

The similar tendency is visible among the blue-collar workers and the white-collar workers in terms of visiting cultural institutions. Every four employee goes to the theatre once a year, visits museums, or exhibitions, none of them goes to the philharmonic.

The approach towards parties and social contacts is completely different in the two groups. The blue-collar workers more willingly visit discos, and meet their friends (43%). One can suppose, that they are tired of the monotonous work, frequently spending 8 hours face to face with a machine, look for a contact with other people. A similar frequency is observed in terms of visiting cafes, and clubs, as well as taking part in family meetings.

These results of the survey were compared to the results of the study by Kacperczyk (2004), which concerned spending leisure time by the residents of Łódź, and results of the study by Dębski (2009) on spending leisure time by the residents of Trójmiasto. In the grup from Łódź, 83.8% of people declared having leisure time, and 70.4% were not particularly satisfied with the way it was spent. The first of compared areas was the family life. For the residents of Łódź, family is the most important, and actually it was family (50.3%), or a partner (21.1%) with whom the surveyed spent their leisure time. they spent their leisure time on talking (57.1%), or watching TV together. The results from Trójmiasto indicate, that 52.2% of people surveyed spent their leisure time with family, or with a partner. 45% of people surveyed needed about 3 hours daily for family and domestic responsibilities. When it comes to social life, one can establish that 57% of residents of Łódź spend their leisure time at home, and only 23% of respondents spend it in clubs, and restaurants. They take part in cultural events unwillingly – 78.9% of them does not visit philharmonic, 72.1% visits museum once a year, or less frequently, and 41.5% does not go to the theatre at all. Both residents of Łódź (72.1%), and of Trójmiasto (68%) declared having a hobby, and they the most frequently chose the cheapest ones. More importantly, residents of Łódź willingly performed touristic and recreational activities, however, the frequency of tourist travels in case of 55% was very rare – only once, or twice a year. The love for recreation was the most visible in cycling (among 28% of respondents).

According to the above mentioned results of surveys one can state that employees of Lajkonik from Skawina spend their leisure time in a similar way to the residents of Łódź, or Trójmiasto. The vast majority of them spends their leisure time at home with family, watching TV, or performing their hobbies, amateur artistic, or do-it-yourself activities. People who spend their leisure time outside their homes, refrain from visiting cultural institutions for the sake of recreation, or social life in clubs, and cafes.

On the other hand, studies of Andrzejewski and Posiadała (2003), carried out on the residents of Gniezno, answer the following question: what type of leisure do people prefer after work, and what factors influence their choice? It turned out, that the surveyed women and men at work declared, that they have leisure time only on non-working days. The amount of leisure time was influenced by their marital status, and family size. The more members of family, the less amount of leisure time. As many as 40% did not leave their place of residence while leisure time. The reason for that is the lack of funds, and family responsibilities. Respondents of that survey were more often relaxing at home and in the place of residence (80% of the blue-collar workers, and 97% of the white-collar workers). The most frequently mentioned forms of spending leisure time among the residents of Gniezno were sunbathing, and hiking. Respondents less often pointed out cycling, and sightseeing.

Only studies by Nowiccy (2003) indicate having much leisure time by respondents. However, such results are not surprising, because the survey was carried out on a group of unemployed women. Nearly 32% of them declared having from 2.1 to 3 hours of leisure time daily, and 31% from 3.1 to 4 hours. Even though the amount of leisure time was significant, the women use it irrationally, because their opinions indicate their passive approach to active leisure and health care.

Groups of employees compared in this study did not differ in gender, age, marital or economic status, therefore one can assume that significant and less significant differences in answers (particularly on questions concerning forms of spending leisure time) most likely result from the character of performed job. The white-collar employees looked for relaxation in the active forms of leisure, and tourism, whereas the blue-collar employees preferred less active leisure, but they did not refrain from parties, and social contacts.

Conclusions

1. Respondents are stay-at-home type of people, they spend their leisure time most frequently with family.
2. The white-collar workers the most frequently chose active forms of leisure.
3. The white-collar workers carried out qualified and recreational tourism activities in their leisure time, whereas the blue-collar workers carried out the recreational and religious tourism activities.
4. The white-collar workers performed amateur artistic and do-it-yourself activities, as well as handiworks, breeding, and farming.
5. The blue-collar workers more frequently take part in parties, or social meetings.

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LEVEL OF PRO-HEALTH BEHAVIOR OF WOMEN FROM RURAL AND METROPOLITAN ENVIRONMENT WHO ARE ACTIVE ON THE HEALTH-RELATED INTERNET PORTALS

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Nowak P.F., Borysiuk Z., (2014) *Level of pro-health behavior of women from rural and metropolitan environment who are active on the health-related internet portals.* Health Problems of Civilization 3 (8), p. 39-43

Summary: The development of health education, education in the scope of healthy lifestyles is significantly affected by the mass media, and primarily the Internet, which is an interactive source of information and the space to acquire competencies supporting health. Access to the Internet is getting more and more widespread; also the range of easily accessible content, related to the lifestyle has expanded. Migrations of populations tend to impair the traditionally understood image of the urban and rural environments. Technological advances in the field of transport communications and IT have also reduced the distance between the two discussed environments. The aim of this study was to assess the level of pro-health behaviors of women who are interested in a healthy lifestyle, and who live both in the countryside and in large cities. The study involved 78 women from the towns with up to 3 thousand inhabitants and 130 from the cities with a population over 100 thousand inhabitants. All research participants were active participants in one of the largest health services for mature women in Poland. The research was part of the PARP project - *Global health problems*, implemented by the Foundation 'Smak Życia'. Standardized research tools Health Behavior Inventory were applied according to the adaptation of Z. Juczyński.

As many as 30% of patients achieved a low level of pro-health behaviors, 45% obtained an average score, and only 25%-a high one, which due to an interest in the subject of a healthy lifestyle, occurring as a constant activity on the online health portal, can be regarded as an unsatisfactory result. The research participants (female subscribers of advice from pro-health service) willing to share their experience, commented on a variety of content related to health issues, however, the level of their health behaviors did not differ significantly from the average values for the Polish population. There was no statistically significant difference in the level of realized health behaviors between women living in rural and metropolitan environments. Research confirmed that Internet theme services concerning issues of a healthy lifestyle, are a chance to equalize disparities in pro-health behaviors, and consequently - in health itself, thus initiatives of raising interest in health education through the mass media ought to be supported.

Key words: health behaviors, health promotion, women, Internet, living environment

Introduction

There are many factors influencing the potential for human health. It is extremely difficult to identify them, and even more so to measure them. However, over the last several dozen years, many researchers have tried to achieve it given the increasing importance of this knowledge from the point of view of public health. Many models of the determinants of health (which were repeatedly publically presented since the 70s of the last century) assumed that it is the health behaviors which play a key role in preserving, restoring and creating human health (Woynarowska 2008).

Health understood in modern terms assumes its holistic perception, including also the adoption of individual responsibility for its condition. Thus, a healthy lifestyle has become one of the socially desirable values, determining social development, since numerous scientific studies confirm the link of one's lifestyle with all the dimensions of health (Pisinger et al. 2009). A healthy lifestyle is a category of individual choices, certain decisions, resulting in specific behaviors. Of course, there are also many limitations associated with the choice. Socio-economic barriers, social inequalities are often raised as those that contribute to inequalities in health, which is an important issue, and at the same time an objective, raised by the WHO in a report *Health for everybody in the twenty-first century* (Zdrowie 21, 2001).

Also in Poland a repeatedly amended National Health Programme has been already approved in Poland (2007, p. 15), in accordance with which the main target assumed *an improvement of health and quality of life related to it and reducing inequalities with regards to health within the population.*

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Pro-health behaviors are those that *in the light of modern medical knowledge usually evoke certain (positive or negative) health effects* (Gniazdowski 1990, p. 1-2).

Despite the dynamic development of modern technologies in medicine, today the important role of individual health behaviors as necessary assistance in the modern health care system in which preventive measures are as important as corrective ones is indicated (Prochaska 2008). The desire to change health behaviors by eliminating or correcting negative habits, and at the same time developing skills and attitudes towards healthy behavior seems to be crucial in the context of the development of civilization diseases which are often based on specific patterns of behavior. It is therefore worth it to analyze health behavior of different social groups, coming from different backgrounds, in order to implement effective interventions of systemic nature. The aim of this study was to assess the level of health behaviors of women who are interested in a healthy lifestyle, living in rural environment, as well as in a large city.

Material and method

The study involved 78 women from the towns with up to 3 thousand inhabitants and 130 from the cities with a population over 100 thousand inhabitants. All the researched persons were active participants in one of the largest health services for mature women- menopauza.pl. The research was part of the project by PARP - *Global health problems* implemented by the Foundation 'Smak Życia'. Selection of the sample was purposeful, the study was conducted via the Internet (online questionnaire) by sending an invitation to participate in it only to persons subscribed to the newsletter of the above mentioned website.

To assess the level of health behaviors standardized research tool - Behavioral Health Inventory according to the adaptation of Juczyński (2009) was applied. This self-report questionnaire consisting of 24 statements describing various types of health behaviors, to which the test participant assigns values from 1 to 5, with reference to the frequency of their occurrence. After summing up the values of all the statements the *overall severity of health behavior* was obtained, which is in the range from 24 to 120 points. The higher the ratio the greater the severity of health behavior. According to the procedure of the applied test, the severity indicators in four categories of behavior were calculated, ie. *proper eating habits, preventive behavior, positive attitudes and mental health practices*. The overall rate of health behaviors was converted to sten scale, and the results obtained in accordance with the guidelines of the author of the test were interpreted as follows: 1-4 sten as *low,* 5-6 sten as *average* and 7-10 as *high*.

The collected materials underwent statistical elaboration, using Microsoft Office Excel 2010 spreadsheet and Statistica 10 programme. To test the significance of differences between the means- T-Student's test was used. The analyzes assumed as relevant the effects, for which the probability value was less than the accepted level of significance of 0.05 ($p < 0.05$). For assessment of the relationships between variables Pearson's correlation coefficient was applied.

Analysis of results

The average age of the researched women from the rural environment was 43 years old, while of those from the city - 48 years. Living environment differentiates the education of the respondents. In cities with more than 100 thousand population nearly 55% of women were higher education graduates and only 6.15% of them had a vocational degree. However, in towns up to 3 thousand inhabitants the highest percentage (47.44%) consisted of persons with secondary education, higher MA degree was held by 32.05% and nearly 18% of respondents had vocational and lower degree of education.

Within the studied population, together with the increasing age, the level of education decreases. A slightly stronger correlation was observed among women in rural areas (-0.396512) than those inhabiting large cities (-0.289851).

The overall indicator of severity of health behaviors among women from large cities equated to 84.09, while in rural areas – it was at the level of 82.37. However, the difference was statistically insignificant. No statistically significant differences were also found for each category of health behaviors with the exception of *Correct eating habits*, of which a higher level was achieved by women from large cities, Table 1.

Table 1. Comparison of the analyzed indicators of health behaviors of the surveyed women- having regard to the living environment

Health habits indicators	women from rural areas $\overline{X}$	Women from metropolitan areas $\overline{X}$	t	df	p
Overall indicator of behaviors	82,37179	84,09231	-0,9936	206	0,321579
Correct eating habits	3,30128	3,60000	-2,9240	206	0,003843
prophylactic behaviors	3,47436	3,53718	-0,6428	206	0,521050
positive mental attitudes	3,56410	3,50513	0,6429	206	0,521015
health practices	3,38889	3,37308	0,1772	206	0,859532

Upon conversion to sten values (in accordance with the procedure adopted by the author's research tools), a general structure of an indicator of the severity of the health behaviors among the surveyed women was obtained, as illustrated on Figure 1. As many as 30% of participants received a *low* score, 45% obtained an *average* score, while only 25% - *high* one.

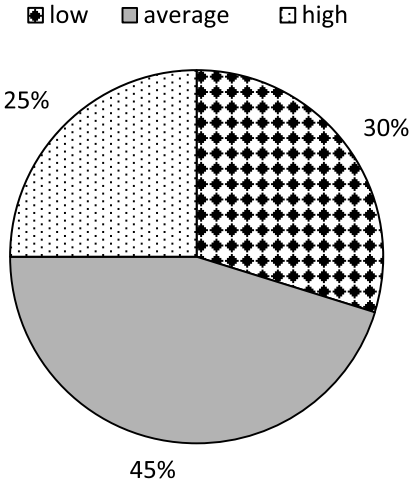

Figure 1. Level of the overall severity of the health behaviors among the surveyed women

The average value of the overall indicator of health behaviors of the respondents (83.23) is slightly lower than the average value reported by the author's research tools for adult Polish women (84.04) . When performing a detailed analysis of each category of behaviors (Figure 2) differences between them were disclosed. The largest of them (result below average) was found in case of *a positive mental attitude* and *health practices*.

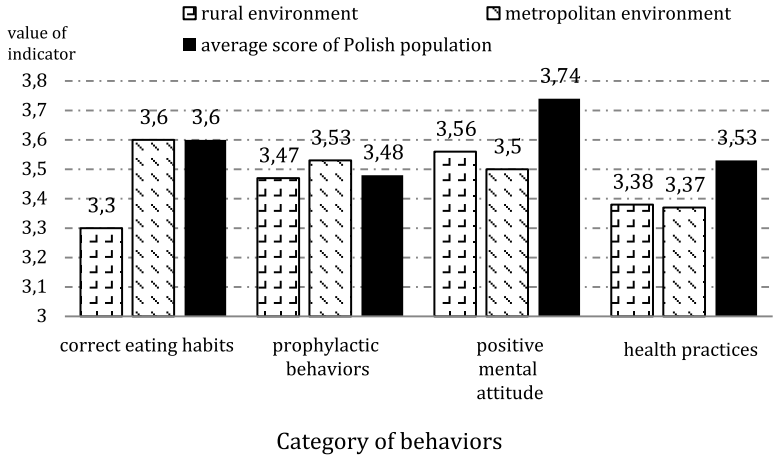

Figure 2. Second level of average values for each category of health behaviors examined in relation to the average performance of the Polish population of women

For women from the metropolitan environment, it was found that with an increasing age the level of overall indicator of health behavior tends to increase (r = 0.278214). Positive correlation with age also occurred in the case of such categories of behaviors as *correct eating habits* (r = 0.238875) and prophylactic behaviors (r = 0.237087). No correlations between age and health behavior in women from the towns of up to 3 thousand inhabitants were noted.

Discussion

Many factors influence the formation of healthy behaviors. Green and Kreuter (1991) mention three: a) aptitude – related to knowledge, beliefs, attitudes of people, b) allowing - allowing certain health policy choices and actions of people, c) strengthening - moral standards, local traditions, social acceptance of certain actions or behaviors or its absence, as well as socio-economic conditions in which man lives.

Certainly, one may wonder to what extend may the rural environment hinder or facilitate the implementation of health behaviors. The fact is that in Poland the human lifespan is correlated to the size of the town in which one lives - the larger, the longer average life expectancy; moreover, rural inhabitants have limited access to specialized health care – they are hospitalized less often than urban inhabitants (Wojtyniak, Goryński 2008).

Research confirmed that groups with lower socio-economic status have a higher incidence of applying healthy practices (Ostrowska 1999). The substrate for the implementation of specific health behaviors are socio-cultural factors (Backett, Davison 1995) . They enforce adopting certain attitudes towards important community behaviors. Local traditions associated with lifestyle (eg. ways of spending free time) are not necessarily the health-related behaviors, but they can be considered as valuable and practiced as they constitute culture advantages of the region, promoted in the context of its economic potential.

Undoubtedly, place of residence determines certain attitudes, behaviors, habits in the field of prevention and health promotion. Despite the many programmes and activities of specialized institutions we might still encounter the inequalities in health and health behaviors.

Gacek (2011), in his study of health behaviors of perimenopausal aged women showed a wide variation of behavior depending on the place of residence. Women living in the city were characterized by higher consumption of alcoholic beverages, more frequent smoking, but also a higher level of participation in recreational physical activities, use of more effective ways of coping with work related stress.

In author's study, no statistically significant differences were noticed, since the studied set of behaviors included in one overall indicator of the severity of health behaviors, and not individual behaviors. Kózka et al. (2013) within the studies on postmenopausal women also showed no significant statistical differentiation in health behaviors dependent from one's place of residence. In the younger age groups-within similar studies using research tools applied in this author's study- also no relation between health behaviors and the place of residence was noted (Niedzielski et al.2008, Nowak, Barcicka 2013).

These results may be explained by the fact that the differences between a town and a countryside tend to blur. Migration of populations impair the traditionally understood image of the urban environment as well as the rural one. Technological advances in the field of transport communications and IT reduce the distance between these environments. Changes are taking place in the occupational structure of people living in rural areas. Subsequently, gradual decline in the share of people employed in agriculture. Non-agricultural sectors in rural areas continuously develop, including rural tourism and agritourism farms with recreation-related facilities. However, in spite of improvements on the educational level of the rural population it is still much lower than the level observed among the urban residents (Bański 2007).

The development of health education, education on healthy lifestyles is affected by the mass media, including primarily the Internet, which is an interactive source of information and space to acquire competencies in support of health. Access to the Internet is becoming wider and wider, a range of easily accessible lifestyle related content has been increasingly expanded (Nowak 2013).

It can be assumed that the use of popularizing thematic services on health, addressed to specific social groups, contributes to eliminating barriers, blurring the boundaries between communities of residence. Thus, technological support, mobile internet access, IT education seem to be the key, and forward-looking, highly efficient investment in the field of public health. It should be noted that in addition to open access to reliable content sometimes a more important seems to be a form of giving of information and the involvement to Internet users. The subjects (subscribers of advice on a health service) were willing to share their experience, comment on a variety of content related to health issues, but the level of their health behaviors did not differ significantly from the average values for the Polish population.

n rural areas, there are sometimes more chances for the implementation of a healthy lifestyle than in the highly urbanized metropolitan environment. The global trend of increasing numbers of people living in cities leads to questions of how is the life in the city healthy and how to build healthy urban environments (Galea et al. 2005). Concentration of population in the metropolitan centers of forces modern solutions. Certainly solutions in the field of infrastructure in Poland still differ from western standards, but to build the so-called. green infrastructure, creating space for recreational sports is a task worthy of attention. The health policies of developed countries see a lot of different investments in the development of friendly health of the population (Rydin et al. 2012).

Conclusions

• As many as 30% of the survey participants achieved a low level of health behaviors, 45% - average, and only 25% - high which, due to the interest of a healthy lifestyle topics (manifested activity in the online health portal) can be considered unsatisfactory.

• There was no statistically significant difference in the level of ongoing health behaviors among women living in rural and metropolitan areas.

• Research shows that Internet thematic services which discuss a healthy lifestyle, are a chance to equalize disparities in health behaviors and, consequently, in health, and therefore should support initiatives to incite interest in hw ealth education through the mass media.

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REPORT FROM THE 3RD INTERNATIONAL SCIENTIFIC CONFERENCE

"Physical activity in a healthy lifestyle"

Ewelina Niźnikowska

Niźnikowska E. (2014) *Report from the 3rd International Scietific Conference "Physical activity in a healthy lifestyle"* Health Problems of Civilization 3 (8), p. 44

On the 27-28 of May 2014, in the Zaborek hotel in Janów Podlaski, the 3rd International Scientific Conference under the title "Physical activity in a healthy lifestyle" took place. The conference was organized by the Institute of Rural Health in Lublin and the Pope John Paul II State School of Higher Education in Biała Podlaska.

The objective of the conference was to exchange views and experiences regarding physical activity in a healthy lifestyle of societies of different countries, taking into account different social and professional groups. On behalf of the hosts, the Conference was inaugurated by the Rector of the Pope John Paul II State School of Higher Education in Biała Podlaska - Professor Józef Bergier Ph. D., who in his speech introduced the invited guests and lecturers and officially opened the plenary sessions.

Representatives of Universities in Prešov, Łuck, Białystok, Lublin, Kielce, Szczecin, Toruń, Zielona Góra, as well as Academies of Physical Education in Gdańsk, Kraków, Katowice, Poznań, Warszawa, Wrocław, and Higher Vocational Schools in Toruń, Krosno, Nowy Sącz and Biała Podlaska participated in the discussions.

The first lecturer in the plenary session was Professor Wieslaw Osiński Ph. D. from the Academy of Physical Education in Poznan, who gave an interesting lecture entitled "A research of physical activity of Poles - a critical analysis." He pointed out that the topic of the Conference is nowadays an exceptionally live issue. The following lecture concerned "The differentiation of physical activities among students from Ukraine," prepared by Professor Józef Bergier Ph. D.

During the two days of the Conference, over 40 papers were presented. The lecturers were the representatives of 22 educational centers from Poland and abroad. The first day of the Conference was divided into two topic sessions concerning "Physical activity of different social and professional groups" and "A lifestyle in good health and in illness." On that day, much of the discussions were devoted to research results concerning physical activity of preschool children, gymnasium and secondary school pupils, as well as to the problem of overweight and obesity and the environmental conditionings of physical activity among students during their freshman year. Particular focus was placed on the physical activity of young women with respect to the chosen somatic indexes and the quality of life of women after mastectomy. The presentations were so interesting that they were followed by vivid discussion led and summarized by the chairmen of each session.

The second day of the Conference was divided into two sessions: "Physical activity in promotion, prevention and therapy" and "Varia." Health benefits of physical activity of women and men aged 50+ leading a passive lifestyle were discussed. Attention was paid to motoric development and physical activity of children and young adults from the Podkarpacie Region, compared to some selected world populations. Moreover, research results concerning physical activity among different groups from Ukraine, Poland and other European Union countries were presented.

Also on that day a poster session took place, during which 10 posters concerning the topic at hand were presented.

Because of its formula and friendly character, the Conference constituted a perfect ground for discussion and exchange of views. The hosts assumed that a professional meeting will be more effective than a full thematic conference and that it will help to improve scientific cooperation between different centers. A warm atmosphere created by the hosts - the Institute of Rural Health in Lublin and the State Vocational School of Higher Education in Biała Podlaska, was undoubtedly a value of the Conference. The Conference was surely very successful, as can be judged from the number of over sixty lecturers and a large audience.

His Magnificence Rector of the Pope John Paul II State School of Higher Education in Biała Podlaska, Professor Józef Bergier Ph. D., during the closing speech thanked the lecturers for accepting the invitation and attending the conference, and invited them to the next, 4th edition of the Conference in May 2015.

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