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Sustainable Methods of Funding Health Care in Primary and Secondary Care for Elderly

Anwar Khan[1]

Abstract

In the elderly people with complex long-term health care needs clinical commissioning groups are currently model of health economic management with sustainable dynamics. This process has continuing healthcare funding, but personal health budgets can provide huge benefits for those individuals. The aim of a clinical commissioning groups performing health budget is to give these elderly people more choice and control over the money spent on meeting their health care and wellbeing needs. This means that clinical commissioning groups select services that meet their needs in a way that is most appropriate for them in a flexible way.

Key Words: Clinical Commissioning Groups (CCGs), Elderly, Health Budget, Cost Control, Health Care Service Management

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Introduction

Primary health care services in the world must spend significant amounts of time providing health care for older people resident in their settings. Initiatives that support funding, sustainability and integration of care for older people with complex health needs and social care with public and private providers are important for continuity and quality of care (British Geriatrics Society (2011). The funding of health care system may be monopolistic, oligopolistic, and capitalist on competitive basis. The financial intermediary is governmental in monopolistic health system. A monopoly is exclusive control of the market by one business (government-run system) because there is no other group selling the product or offering the health service (Centre for Policy on Aging; 2009). A true health care services monopoly rarely exists because if there is no competition, health care business will increase the price while reducing output to increase profits. It can also lead to inferior health care services. Oligopolistic health care system is the middle between monopoly and capitalism (CQC; 2012). An oligopoly is a small group of health care businesses, which control the health care market for a certain health care service for example out-patient, hemodialysis etc. This gives these health care businesses huge influence over consumer price and other aspects of the health care market with antitrust laws. Capitalism in health care market is a condition where there is open competition, a free health care market, and private ownership of all hospitals and caregiver such as family practice center (Davies, S.L. et al. ; 2011). This encourages private businesses and investments through the dictates of supply and demand, price, and distribution, which are controlled by health care business owner's investors and customer. Profits are distributed among the owner's shareholders and customer that are the shareholders in private companies that are called capitalists (National Council for Palliative Care and NHS 2007).

For the sustainability of the monopolistic funding approaches, one of the easy way for funding health care is by commissioning services that has been to see individuals as eligible recipients of health care services provided from a limited range of options as identified by health professionals (The Health Foundation ;2011). This strategy sees individuals as local citizens, with a full health rights, choices and responsibilities. The role of community health and social care can then be focused on supporting people with the most complex needs who require added specialized and tailored health care services (Gordon et 2012).

Commissioning is a kind of complex process of business that helps to address easily local population need in the country such as elderly. This process has several outcomes and it is sustainable way of health care give (Gage et all., 2011). This way helps to construct many products and services to local population such as child, old people, women etc. In health care services, health commissioning is not easy to use however it is a unique way to cut cost. In England clinical commissioning groups (CCGs) are in use in order to manage health care services. CCGs are made up physicians, nurses, allied health care professionals (The Health Foundation, 2011). All of them use their knowledge of local health needs to plan and buy services for their family practice center from any health care service provider that meets Health Budget Law and formal health insurance schemes of their country. Figure 1. The Commissioning Process described with correct definition by in and out.

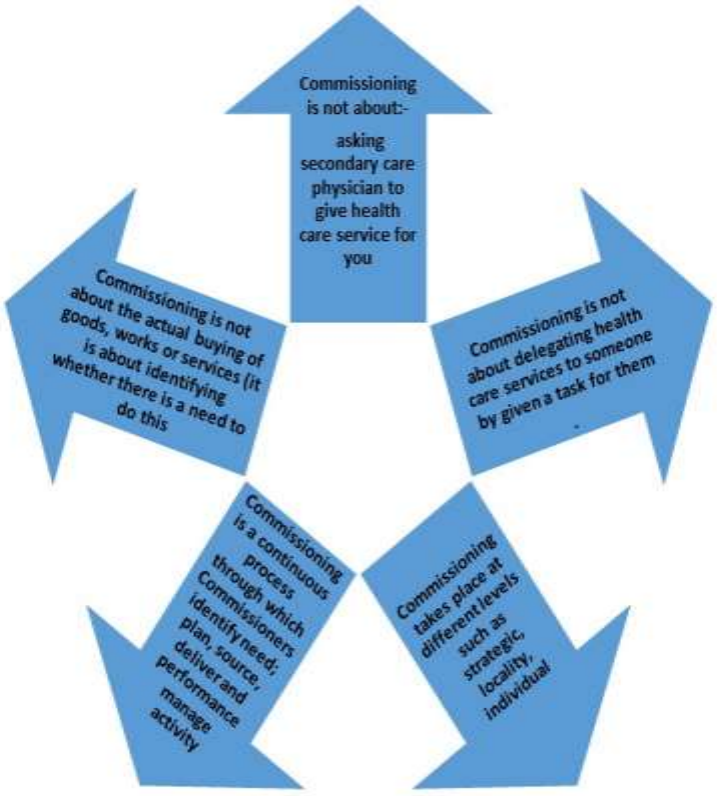

Figure 1. What is commissioning is and is not

The Department of Health describes commissioning as the means to secure the best value for local citizens of a city and taxpayers (SCIE 2012). This is the process of facilitating the health care need, by specifying and procuring services for the local population of big cities. Delivering the best possible health and wellbeing outcomes and provide the best possible health and social care provision within the best use of available resource needs levels (SCIE 2013).

Those level are as follows shown in figure 2:

Figure 2. Commissioning has some levels to achieve that are cycle of activities at a strategy

Commissioning for elderly has become established over the past decade through a number of papers emerging from the government, which have set out the aims for service delivery and

defined approaches to commissioning services. A timeline is provided on this site providing an outline of the key documents, which describe and define commissioning (HIEC, 2013).

The principal idea is to achieve those outcomes and supporting health services providers to enable them to deliver outcomes for elderly individual health service users. Health care commissioning can happen at many levels in representing the strategy either in primary care or in secondary care by supporting elderly as shown in Figure 3.

Figure 3. Supporting elderly by Health Commissioning Activities

The CCGs has made caFigure ring for the elderly a key priority and will create its "Integrated Older People's Pathway and Adult Community Services Procurement" process to secure a contract that will offer joined up, integrated care across geographic and organizational boundaries. Specific strategy for older people via health commissioning are shown in figure 4.

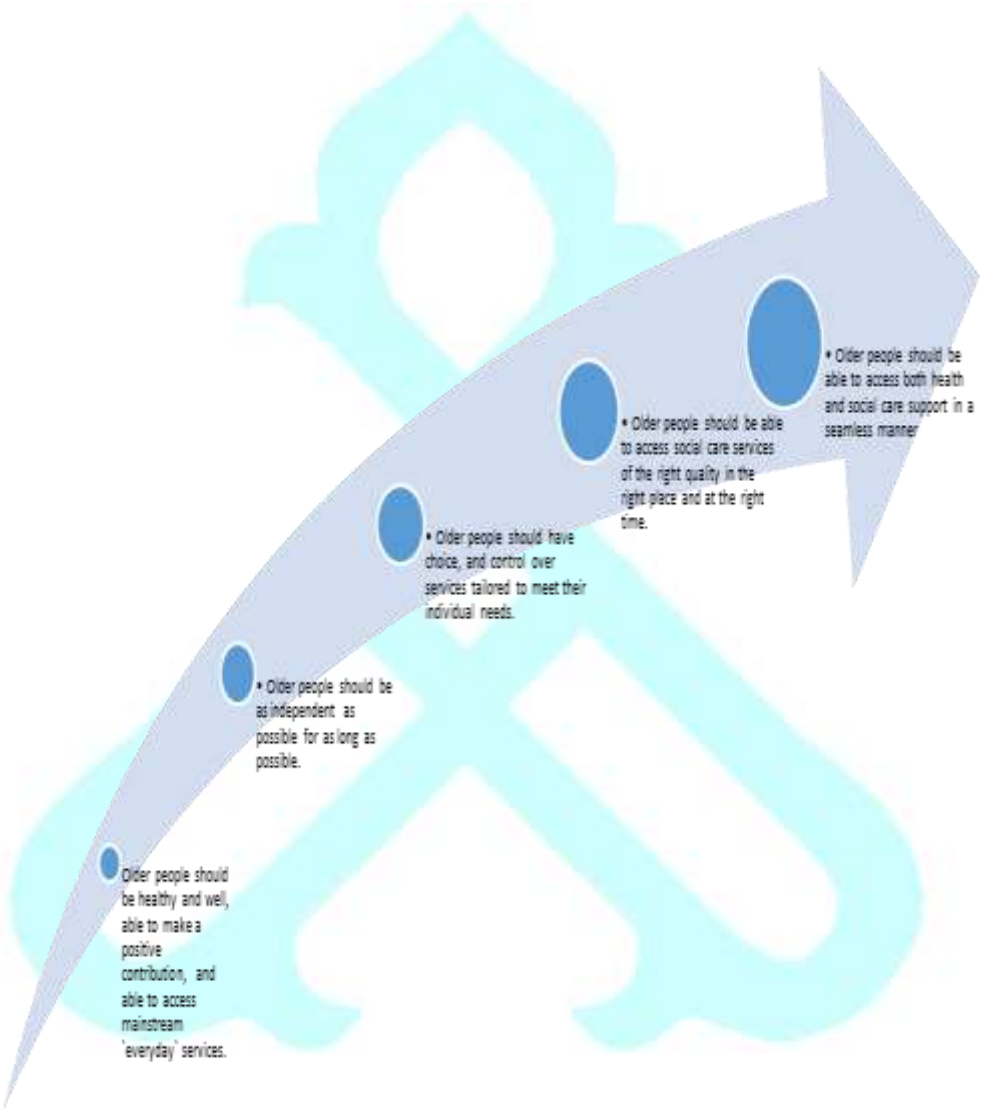

Figure 4. Community Elderly Care Services by CCGs

CCGs leaders are running a management process worth between £700m and £1.1bn a year to provide care services for elderly people by integrated health care. CCGs and integrated health care is usually means providers collaborating on primary and secondary care. In practical terms, this result means fewer hospital admissions and often beneficial both for the patient and for the whole health economic system as wel (Wagner, 1988).

There are many models of health commissioning activities, they usually describe a cyclical process of activities encompassing local population health care assessment needs, allocating resources to meet health care needs, developing or purchasing health care services and monitoring health care performance via indicators (Seymour and Froggatt, 2009; Davies 2011). This cyclical health care performance management elements are analyze, plan, do and review (see Figure 5).

Figure 5. The commissioning cycle, which should in turn inform the ongoing development of strategic commissioning.

Results

Commissioning for elderly is not buying health services from a secondary care hospitals, physiotherapies, dietetics etc. It means that health services are procured at the best possible cost to meet the needs of the purchaser and health care seekers in terms of quality and quantity, time, and location with the collaboration of both of them. "Purchasing and Contracting" equally apply to in-house service provision for elderly or grant funding arrangements as the same time.

Four main key elements of sustainable health commissioning groups are as follow such as "analyse, plan, do and review" and consists of similar activities etc.

Improving health services for people that are old is CCGs priorities. The aim of CCGs for elderly is to deliver improved patient experience, better community care and reduced unplanned admissions to hospital in a safe way. The CCG's overall vision is for sustainable health service transformation for elderly is 'manage locally by primary care clinicians in partnership with their local community, commissioning quality health services for elderly that ensure value for money and the best possible outcomes for old people who use them.

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INVESTIGATING THE WELL-BEING OF ADOLESCENTS ENROLLED AT RELIGIOUS VOCATIONAL HIGH SCHOOL THROUGH THEIR SELF-PERCEPTION FIGURES

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Abstract

As in other psychosocial periods, the adolescence is one of the periods, which individuals should adapt to and pass though successfully. During this period, the individual might encounter with many personal, social, occupational and economic problems. What is important for the individuals throughout this period is to be able to have a positive self, to be uniquely individualized by maintaining their psychological well-being and to be able to develop their own self-perceptions by being aware of their own selves. Thus, the aim of the present study is to investigate the psychological well-being of 9th grade adolescent students enrolled at Religious Vocational High Schools through the depiction of their self-perceptions depending on several variables and to shed light on further similar studies. The participants of the study are 160 14-year-old students coming from different socio-economic background. The participating students attend Kadıköy Male Religious Vocational High School (Boarding) and Sultanbeyli Female Religious Vocational High School in the Istanbul province. As data collection instruments in the study, the Psychological Well-being Scale and the picture drawing technique were used. The results revealed that although students' levels of psychological well-being do not vary significantly depending on the self-perception figures they draw, there are significant differences depending on the gender, their perceived socio-economic level and whether they are boarding or not.

Key Words: psychological well-being, adolescence, self-perception

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INTRODUCTION

The adolescence period is a process between childhood and adulthood. This process embodies the change, development and the growth of an individual. Following this period, the adolescent should have an identity, be individually unique and should finally prepare the ground to create his/her self-perception by being aware of his/her ego (Haran, 1992).

According to Rogers, the self can be defined as the self-perception and self-assessment ways of an individual. On the other hand, Jung points out that psychological well-being is actualized by being a "self" and a "whole person"; in other words, psychological health occurs only when we face with and be aware of the unwanted and dark features of ourselves, not when we escape from these realities (Corey, 2005). In Jung's book entitled "The Undiscovered Self" , the following remark is stated: *"As we get to know ourselves or in other words, as we explore our own soul, we are faced with our instincts, and their world filled with images shed light on the forces which we rarely notice as long as everything goes well as they sleep in the depths of our souls. They are terrific potential and influential forces. Whether these forces, related images and thoughts will lead us to a positive and constructive way or to a disaster depends fully on the preparedness of the conscious mind and its approach*" (Çınar, 2011).

Drawing a boundary between personality and the self is not very possible. Although the self and the personality are intertwined in terms of development and structure, the self has characteristics differing from the personality. These characteristics refer to the awareness of people's own personalities and their description as well as judgments of their own selves. The self is the individual's subjective side, and thus the adolescent is in constant search of his/her own self (Köknel, 1982).

The importance of the childhood period is without doubt unquestionable in the formation of the personality within the arguments of Freud. During the childhood period, the way the mother and the child interact with each other is especially decisive in the formation of the child's personality development. While we evaluate the personality traits of the adults who have passed though the adolescence period, we should focus on their experiences, family relationships, especially in the childhood period and the effects of these on the youth period. It is thought that the quality of the relationship between the mother and the child during the childhood period and the way the mother perceives her child have an influence on individuals' way of perceiving themselves (self-

perception), their relationship, environment, and thus their psychological well-being when they reach the adulthood (Halisdemir, 2013).

The basic configurations in the adolescence period are centered on the personality development. It is known that the adolescent exerts great efforts for the development of self. While some adolescents pass though this period comfortably and securely, this period is challenging and troublesome for some others (Demir et al. 2009). Similarly, Erickson argues that the development of self comes into prominence in the adolescence period and for him, the developmental task of this period is identity seek. Adolescents in pursuit of novelties start to question the existing values and the meaning of life. The youngsters encounter with the problem of gaining psychological independence, finding new sources to guide themselves and the problem of acceptance. These individuals are inclined to do accommodation to find a midway through the tendencies of becoming an independent individual and being adapted into the society. The main problems during this period are conflicts with parents, failure at school and the problems in terms of their relationships with themselves and others of the opposite sex (Haran, 1992). On the other hand, social skills develop during this period, when anxieties and conflicts are frequently observed. G.Stanley Hall known to have carried out the first scientific studies pertaining to this period define the adolescence as the period of 'Strom and Stress'. It is suggested that as the adolescents deal with their problems in a constructive way, they can display a healthy identity development (Hamurcu, 2011).

The discussions about well-being have continued since the times of Aristotle who stated that there is "well-being" (eudemonism) at the very top of the things that can be succeeded by means of human behaviors. Later, Bradburn (1969) approached Aristotle's definition of well-being differently and considered it as happiness. For Bradburn, happiness is the result of life satisfaction (Yılmaz, 2013).

According to Myers, Sweneey and Witner (2003), well-being is a way of life. Also, it refers to being healthy at the maximum desired level, being directed to be good, being a compact person, having the goal of self-realization, aiming to actively achieve this goal and being functional in all areas. On the other hand, well-being is handled as something that embodies happiness as well.

It is realized that there have been attempts to explain well-being from the perspectives of different researchers. However, Ryff's definition of well-being and the psychological well-being model are important as the theoretical base of the issue. From Ryff's (1989) point of view, well-being is not happiness; instead, it should be approached as a concept referring to the development of a person's

own potential at the maximum level and the actualization of him/herself. He defined psychological well-being as positive psychological functionality and investigated this concept under six dimensions: self-acceptance, positive relationships with others, autonomy, environmental control, life goal and personal development (Kuyumcu, 2012). Ryff's presentation of well-being in a versatile way is very important. His self-acceptance component refers to an individual's positive assessment of his/her past life or of him/herself, the recognition, acceptance of various aspects of the self and creating his/her self-perception. The dimension of positive relationships with others refers to a tendency towards quality, strong empathy, love and friendship in his/her relationships with other people. The autonomy, on the other hand, is reaching the level at which the individual could make decisions depending on his/her own self-judgment. Environmental control describes people's capacity to effectively manage their own lives. Life goal is the individuals' belief in the meaningfulness and purposefulness of their lives while personal development is described as having the feeling that their development is continuing and they gain new experiences and a sense of realizing their potentials (Cenkseven, 2004).

Reviewing the relevant literature dealing with psychological well-being, one can notice that in many studies, females have gained higher scores than males in the "positive relationships with others" and "personal development" components of well-being (Cooper et al., 1995; Ryff, 1989; Ryff, 1991; Ryff, 1995; Ryff et al., 1994). For instance, Cenkseven (2004) indicated that the gender is one of the predictors of psychological well-being and added that the scores of girls are higher than the scores of the boys in terms of the "positive relationships with others", "life goal", "self-acceptance" and "personal development" sub-dimensions.

The related literature have concentrated upon the investigation of psychological well-being depending on various variables, such as physical health, personality, family support, marital status, social support, social skills, age, gender, education background, income level, academic achievement, self-esteem and emotional intelligence (Cenkseven, 2004; Gürel, 2009; Gülaçtı, 2009; Timur, 2008; Saygın, 2008). However, there have not been any studies exploring the adolescents' psychological well-being and their self-perception.

For adolescents to have psychological well-being, they should be helped to pass healthily through the self-development stages and to realize themselves. Therefore, the aim of this study is to investigate adolescents' psychological well-being depending on the self-perception figures drawn by them.

Thus, the following sub-aims have been formulated for the present study:

- Does the adolescents' level of well-being differ depending on the gender variable?
- Does the adolescents' level of well-being differ depending on the socioeconomic level?
- Does the adolescents' level of well-being differ depending on whether they are boarding or not?
- Does the adolescents' level of well-being differ depending on their positive-negative self-perception figures?

METHOD

In this model, the model of the research, participants, data collection instruments and information about the data analysis are provided.

Research Model

In this study, the investigation of 9th grade male and female students' psychological well-being though the self-perception figures they draw is based on a screening research model in which qualitative and quantitative research methods are mixed. Screening models are research approaches aiming to describe an event from the past or present as it exists (Karasar, 1994). On the other hand, mixed method approach involves the collection of both qualitative and quantitative data related to the same main phenomena in a single study or in a number of studies, the analysis of the data and their interpretation (Leech and Onwuegbuzie, 2007).

Participants

The participants are 160 students, 80 of whom are female students attending the 9th grade at the Sultanbeyli Female Religious Vocational High School while the remaining 80 students are boarding students attending the Kadıköy Male Religious Vocational High School in Istanbul.

Data Collection Instruments

The qualitative data was collected by means of the Psychological Well-being Scale and the qualitative data was obtained via the picture drawing technique. Following the Psychological Well-being Scale, students were given a blank A4 paper and were asked to draw a symbol, figure or a shape that they thought could reflect their selves. They were also asked to write at the back of this paper one sentence about what they drew.

Psychological Well-being Scale

The Psychological Well-being Scale was developed by Ryff (1989) as a self-report scale aiming to assess psychological well-being. The scale was developed as a result of piloting with 321 people.

The scale contains 84 items and 6 factors in the form of 6 Likert type. The factors making up the scale are as follows: positive relationships with others, autonomy, environmental control, personal development, life goal and self-acceptance. Each factor is comprised of 14 items. A total score can be obtained from the Scale of Psychological Well-being; also, sub-factors can be scored separately. The highest score that can be obtained in the scale is 504 while the lowest score is 84. High scores in the scale mean that psychological well-being is high. The internal consistency coefficients (Cronbach Alpha) for the factors are as follows: positive relationships with others .91; autonomy.86; environmental control .90; personal development .87; life goal .90; self-acceptance .93. The test-retest reliability coefficients are between .81 and .88. The adaptation study of the scale into Turkish was first carried out by Cenkseven (2004). The reliability study was carried out with the involvement of 475 university students. The internal consistency coefficients of the scale (Cronbach Alpha) were found as follows: positive relationships with others .83; autonomy .78; environmental control .77; personal development .74; life goal .76; self-acceptance 79. The total internal consistency coefficient of the Psychological Well-being Scale was found .93. The correlation coefficients for the test-retest reliability were found as follows: positive relationships with others .74; autonomy .77; environmental control .77; personal development .74; life goal. 75; self-acceptance .76. In addition, the test-retest correlation coefficient for the total score was determined to be .84. The adaptability of the study into Turkish was again conducted by Cirhinlioğlu (2006). The scale was administered to a total of 515 randomly selected volunteering 1st and 4th grade students at Cumhuriyet University. It was realized that correlation coefficients in the item-total correlations were between .14 and .68. The internal consistency coefficient (Cronbach alpha) was found to be .91. The split-half reliability was found to be .86. The internal consistency coefficients of the subscales (Cronbach alpha) were as follows: positive relationships with others .77; autonomy .73; environmental control .83; personal development .74; life goal .75; self-acceptance .86. It was pointed out by the researcher that the results of factor analysis are in parallel with Ryff's (1989) findings about the original scale.

Data Collection

The quantitative data of the study was collected from volunteering participants by means of scales. On the other hand, the qualitative data was gathered via the picture drawing technique. In this technique, students were asked to express their own self-perception by drawing a symbol, an image or an object and to explain their drawing in one sentence. Data collection applications were conducted by researchers in the participants' classrooms. Only the volunteering participants were

selected. The application of the data collection process took approximately 45 minutes. In addition to descriptive statistics, t-tests were used to analyze the data obtained during the data collection phase.

FINDINGS

The findings are presented below to seek an answer to the question "Does the adolescents' level of well-being differ depending on gender, the perceived socioeconomic level, whether the participants are boarding or not and positive or negative self-perception?" The findings pertaining to this question are illustrated on Tables 1,2,3 and 4.

Table 1. Investigation of the Psychological Well-Being Scale Scores Depending on the Gender Variable

Score	Groups	*N*	$\bar{x}$	*ss*	$Sh_{\bar{x}}$	*t* Test		
						t	*Sd*	*p*
Psy. Well-being	Male	80	310,91	37,27	4,16	-4,122	5,89	,000
	Female	80	335,21	37,28	4,16			

As can be seen in Table 1, as a result of the Independent samples t test applied to reveal whether the "Psychological Well-being Scale" scores of the participants vary significantly depending on the gender variable, the difference in the arithmetic means of the groups was found to be significant *(t= -4,122; p<,001*). The significance was determined to be in favor of the female students.

Table 2. Investigation of the Psychological Well-Being Scale Scores Depending on the Perceived Socio-economic Level

Score	Groups	*N*	$\bar{x}$	*ss*	$Sh_{\bar{x}}$	*t* Test		
						t	*Sd*	*p*
Psy. Well-being	Low	80	335,21	37,28	4,16	-4,122	5,89	,000
	High	80	310,91	37,27	4,16			

As can be understood from Table 2, the result of the Independent samples t test used to show whether the "Psychological Well-being Scale" scores of the participants vary significantly depending on the perceived socio-economic level variable indicate that the difference in the

groups' arithmetic means was significant *(t= -4,122; p<,001*). This significance was found to be in favor of the students with low socio-economic levels.

Table 3. Investigation of the Psychological Well-Being Scale Scores Depending on Whether Participants are Boarding

Score						*t* **Test**		
	Groups	*N*	$\bar{x}$	*ss*	$Sh_{\bar{x}}$	***t***	*Sd*	*p*
Psy. Well-being	Boarding	80	310,91	37,27	4,16	-4,122	5,89	,000
	Not Boarding	80	335,21	37,28	4,16			

Table 3 presents the results of the Independent samples t test applied to investigate whether the participants' scores in the "Psychological Well-being Scale" vary depending on whether they are boarding or not. According to the table, the difference in the arithmetic means of the groups was found to be significant *(t= -4,122; p<,001*) and this difference was in favor of the students who do not stay in the dormitory.

Table 4. Investigation of Variation in the Psychological Well-Being Scale Scores Depending on the Self-perception Figures Drawn by the Participants

Score	**Groups**	*N*	$\bar{x}$	*ss*	$Sh_{\bar{x}}$	*t* **Test**		
						t	*Sd*	*p*
Psy. Well-being	Positive	111	319,08	37,89	3,59	-1,901	6,83	,061
	Negative	49	332,21	40,71	5,81			

As illustrated in Table 4, as a result of the Independent samples t test applied to show whether the "Psychological Well-being Scale" scores of the participants vary significantly depending on the

self-perception figures they drew, it was found that the difference in the groups' arithmetic means

Adolescent Boys' Pictures Symbolizing Their Self-Perception	F	%

was not significant *(t= -1,301; p>,05*).

Qualitative Findings

In order to analyze the qualitative data of the study, the content analysis was used. In content analysis, themes and categories are formed in light of the obtained qualitative data. The purpose of this analysis technique is to reach concepts and relationships that can justify the data. The data summarized and interpreted descriptively are subjected to a deeper analysis process by means of content analysis, and thus concepts and themes that cannot be noticed though a descriptive approach can be revealed thanks to this analysis method (Yıldırım, Şimşek, 2013).

For the analysis of the qualitative data, adolescents' statements about the pictures they drew to explain their self-perception were examined. The content in these statements was interpreted based on every single word. The following six themes appeared as a result of interpreting the words in their statements: emotions, concepts, future plan, religious life, interests, personality. Related categories were formed for each theme.

Emotions (positive)		
Happiness (Smiley)	2	%1.25
Sacrifice (Dying for others)	1	% 0.6
Emotions (negative)		
Loneliness (Man away from Earth)	2	%1.25
Complexity (Mixed flames, flying letters)	3	%1.87
Grudge (Making a the roof fall over the enemy)	1	% 0.6
Unhappiness (Man lying on the ground, weeping face)	2	%1.25
Desperation (Ball stuck in the membrane)	1	% 0.6
Concepts (positive)		
Peace (Yin and yang)	1	% 0.6
The Value of Time (Watch)	1	% 0.6
Time Management (Watch)	1	% 0.6
Justice / Equality (Scale, clock, bird)	5	%3.12
Life (Birth, life and death triangle)	1	% 0.6
Freedom (Bird)	3	% 1.87
Concepts (negative)		
Future Plan (positive)		
Money (Coin)	1	% 0.6
Dreams (Dreaming child)	1	% 0.6
Future Plan (negative)		
Religious Values (positive)		
Prayer (Prayer Rug, Mosque)	3	%1.87
Return to Islam (Ottoman Tughra)	1	% 0.6
Interests (positive)		
Curiosity to learn (Book)	1	% 0.6
Caricature	1	% 0.6
Football (Football playing child)	1	% 0.6
Electronics (Electrical Circuits, PC, Tablet)	2	%1.25
Game	1	% 0.6
Design (Logo)	3	%1.87

Sports (TSA emblem, Swimming, Basketball)	4	%2.50
School (School logo)	1	% 0.6
Parapsychology (Telekinesis)	1	% 0.6
Travelling (Map)	2	%1.25
Interests (negative)		
Personality (positive)		
Leadership (Führer, Alpha)	2	% 1.25
Creativity (Bulb burning child in his head)	1	% 0.6
Chromaticity	1	% 0.6
Combativeness (Ottoman Tughra)	1	% 0.6
Helpfulness	1	% 0.6
Orderliness	*1*	*% 0.6*
Confident	1	% 0.6
Sensitivity	1	% 0.6
Personality (negative)		
Dullness (Thinking and continuously sleeping man)	2	%1.25
Indifference (Man with a hat on his head)	1	% 0.6
Aggressiveness (Sword, being in front of the herd)	3	%1.87
Instability (Mixed letters, route)	1	% 0.6
Introversion (Flashing box)	1	% 0.6
Thoughtful (Thinking man)	1	% 0.6
Adolescent Girls' Pictures Symbolizing Their Self-Perception	F	%
Emotions (positive)		
Hope (Butterfly, colorful trees)	2	% 1.25
Happiness (Smiling boy, butterfly, snow, colored stripes, chocolate)	9	% 5.62
Emotions (negative)		
Complexity (One live one pale flower, question mark, crumpled paper, smiley and sad face, complex lines, a tree with a variety of fruit trees)	11	% 6.87

Disconcerting (Weaving line)	1	% 0.6
Pessimism (Circle with scribbled inside, dried tree, weeping girl, mixed lines)	4	% 2.5
Unhappiness (Sad face, bubble, crying child, broken bottle, sun and clouds)	10	% 6.25
Loneliness (Tree, sun, a vertical straight line, ball, lonely child, flower)	5	% 3.12
Despair (Butterfly in cage, rail)	2	% 1.25
Concepts (positive)		
Justice / Equality (Scale)	3	% 1.87
Infinity (Infinity sign)	1	% 0.6
Freedom (Birds, sea, trees, sun, clouds)	5	% 3.12
Life (Healthy children)	1	% 0.6
Concepts (negative)		
Future Plan (positive)		
Job (Doctor, teacher)	2	% 1.25
Dreaming (Question mark, Speech Bubble)	1	% 0.6
Interests (positive)		
Social Media (Google Emblem)	1	% 0.6
Football (FB Emblem)	1	% 0.6
Music (MP3)	1	% 0.6
Fashion (Dress)	1	% 0.6
Book	1	% 0.6
Interests (negative)		
Mathematic	1	% 0.6
Personality (positive)		
Differences (Note)	1	% 0.6
Benevolence (Sun, clouds, birds, angel)	3	% 1.87
Confident (Sun, sea, ship, princess, little girl, rain)	6	% 3.74
Chrominance (Colorful lines, rainbow)	2	% 1.25
Positivity (Trees, sun, smiling flower)	2	% 1.25
Personality (negative)		
Introversion (Sad face, turtle, children)	3	% 1.87

Findings about the Statements of the Self-Perception through Emotions

While some students drew their self-perceptions using positive emotions (n=14), some others drew pictures expressing their negative emotions (n=42).

Some of the explanations of the figures students made about their drawings to express their self-perceptions through their emotions are as follows:

‘’Happiness always helps people’’ (Smiley)

‘’A young person whose spirit has become older because of the extreme shocks early in life and who hates his/her own past’’ (Sad face)

‘’I had a child in myself who was not liked and injured in the past; he was waiting for the future hope in the middle of the ocean’’ (Man lying on the ground in the corner of the wall)

Findings about the Expression of Self-Perception through Various Concepts

All of the students have expressed their self-perception using positive concepts (n=22).

Some of the statements related to figures drawn to express students' self-perception by means of various concepts are as follows:

‘’I am fair, I attach important to time and I am peaceful’’ (Scale, Pigeon, Watch)

‘’Being fair in life means behaving everyone equally and not discriminating against people. This scale represents me’’ (Scale)

‘’Time and using time are very important for me’’ (Watch)

‘’Peace should prevail everywhere. I symbolize the peace’’ (Yin and Yang)

‘’I am as free as birds’’ (Bird)

‘’ A campsite represents me because I like to be free in nature’’ (Tent)

‘’The flag is freedom. I preferred to draw a flag as I felt myself free’’ (Flag)

Findings about the Expression of Self-Perception through Interest Areas

While the majority of students drew their selves using positive interest areas (n=20), only one students drew a picture including a negative interest area (n=1).

Some of the figure statements of the students expressing their self-perceptions through their interest areas are as follows:

‘’I like Photoshop very much’’ (PS Logo)

‘’I am a traveler and would like to travel around the world’’ (World, Plane)

‘’Travelling is the meaning of my life and I like visiting different cities and countries’’ (Map)

‘’I am an athlete. I like sports’’ (Ball, Basketball Hoop)

Findings about the Expression of Self-Perception through Personality Characteristics

While some students depicted their self highlighting their positive characteristics (n=23), some other students drew their figures highlighting their negative characteristics (n=10).

Some of the statements made about the figures by students expressing their self-perception using their personality characteristics are as follows:

‘’I always try to be at the forefront and the best’’ (Being at the forefront of the herd)

‘’The only person I look up to in my life is Führer’’ (F)

‘’This is an Alpha sign. Alpha means the leader of the herd and I describe myself as the leader of a herd’’ (Alpha sign)

‘’ I am an ambitious person and I am happy with my ambitions on my way’’ (Way, triangle)

‘’I can describe myself as an ambitious, fun and approachable person’’ (Sword)

‘’This closed shining box represents me because people do not understand me without getting to know me and do not want to leave me after they get to know me’’ (Closed box)

Findings about the Expression of Self-Perception through Religious Values

Among the students, four of them expressed their self-perceptions with symbols including religious values.

‘’Prayer is the pillar of religion. Religion is paramount’’ (Prayer Rug)

‘’I used this symbol because my life is based on prayer and religion’’ (Mosque)

DISCUSSION

In this part of the study, the results of the current research project are interpreted in the order given as sub-aims in the introduction part of the study.

According to the results, the psychological well-being levels of the students were higher in favor of female students. Additionally, it was revealed that the psychological well-being levels of girls who came from socioeconomically low backgrounds and did not stay in the dormitory were higher. Many studies in the relevant literature support this very finding (Cenkseven, 2004; Gürel, 2009; Cenkseven and Akbaş, 2007; Kuyumcu, 2012). However, there have been other studies showing that the psychological well-being does not vary depending on the gender variable (Hori, 2010; Kirkcoldy, Furnham and Siefen, 2010). In a similar vein, Kalafat (1996) concluded in his study that the depression and happiness levels do not vary depending on the gender.

The reason why there was no significant difference between psychological well-being and the self-perception and why girls had higher levels of psychological-well being scores than those of the boys might be justified by the fact that male participants in the study were all boarding student. It can also be suggested that besides staying in the dormitory, the fact that the schools were not mixed-sex schools might have negatively influenced boys and girls' self-development, and thus their psychological well-being.

The qualitative findings of the study revealed that the adolescents reflected their self-perception mostly through figures expressing their negative emotions. From Erickson and Freud's perspective, internal troubles and egocentric features that are both the characteristics of the adolescence period may be reflected in the psychological state of the participants. In a study, it was observed that many emotional, psychological and behavioral problems and related stress factors appear in the adolescence period and some methods were suggested in the study to prevent the stress (Basut, 2006). In another study, social and economic problems, unemployment, university entrance and education problems are other issues negatively affecting the psychological development and mental health of the adolescents. One of the most important mental health problems experienced throughout this period is hopelessness. Difficulties encountered in education process, unemployment, deprivation and poverty are some of the other factors increasing the level of hopelessness (Özmen, Dündar, Çetinkaya, Taşkın and E. Özmen, 2008).

Another important finding of the study is that the psychological well-being of the girls not staying in the dormitory was higher than the boys staying in the dormitory even though the girls' socioeconomic level was lower. The issue whether staying in a dormitory has an influence on the

psychological well-being of the students can be further studied in the future. Moreover, the effects of single-sex schools on the development of adolescents' self-perception and the relationship of students' positive-negative self-perception figures with their psychological well-being can be concentrated on in the future studies.

In addition, a significant relationship between the participants' psychological well-being and their self-perception figures they drew positively or negatively was not found in this study. Nevertheless, according to similar studies in the relevant literature, the self-perception levels of the adolescents have been identified as predictors of psychological well-being (Cenkseven, 2004; Gürel, 2009; Gülaçtı, 2009; Timur, 2008; Saygın, 2008; Schmutte and Ryff, 1997; Segrin and Taylor, 2007).

Much of the data of many studies collected by means of the picture drawing technique was obtained from the children (Dizman, Gültekin, Akyol 2005; Saydam, 2004; Şen, 2005; Miyandoab, 2008). There have been no studies in which the perceptions and emotions of the individuals in the adolescence period were investigated though this technique. Using the picture drawing technique applied in the study, it is possible to collect more detailed data about the adolescents' perceptions, thoughts and emotions. Therefore, it is recommended that drawings of different sample groups should be interpreted in order to help guidance and counseling teachers and experts working in this field in the process of evaluating children and adolescents.

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An Educational Intervention To Prevent Irrational Prescribing By Primary Care Physicians: Results From Turkey From The OTC_SOCIOMED Project Second Phase

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Abstract

Misuse of over-the-counter medications is a serious issue in primary healthcare, leading to the need for better education of general physicians on appropriate prescribing behaviour. This paper discusses the findings from the OTC-SOCIOMED project (Assessing the Over-the-Counter Medications in Primary Care and Translating the Theory of Planned Behaviour into Interventions) in Turkey. During November 2011 the implementation of intervention was done in Bursa, which was selected as study region in Turkey. The participants were 28 family physicians in Turkey who were assigned to two study groups; a three-step training intervention – a 1-day intensive course on rational drug prescription, 4 weeks of reminder messages, and face-to-face interviews – was provided for the intervention group. Four different data collection tools were used before and after the intervention: a training assessment questionnaire, a complementary questionnaire on OTC medicines, the Theory of Planned Behaviour Questionnaire, and a patient medication form. Participants were satisfied with the quality of the training, the delivery of the topics, and the subsequent reminder messages. There was a significant difference on only one item ('The decision to prescribe belongs completely to me'), which evaluated behaviour control in the intervention group after training. Lack of time most often explained why physicians could not inform patients about OTC medicines. Physicians were aware of their own need for training in rational prescribing, and this training model was quite acceptable to them. However, the short study duration was an obstacle for observing attitude changes among the doctors.

Keywords: Irrational prescription, over-the-counter, continuing education

Introduction

The misuse of over-the-counter (OTC) medicines and irrational prescribing are serious problems in primary healthcare settings. The World Health Organization (WHO) reported that nearly half of all prescription medicines are unnecessary or misused and that half of all patients use prescribed medicines inappropriately (WHO, 2010). Polypharmacy, insufficient self-medication, and prescription noncompliance with clinical guidelines are important factors in irrational prescribing.

The WHO has suggested that all countries strive toward the rational use of medicines through health policies, information, and education (WHO, 2010). It has been demonstrated that the most effective approach for promoting rational medicine use in the primary healthcare system is the simultaneous supervision of both healthcare providers and users (WHO, 2010). Previous studies have shown that educational interventions lead to changes in the prescribing attitudes of primary healthcare physicians (De Vires et al., 1994).

Irrational prescribing remains one of the most important problems in primary care in Turkey (Tsiantou et al., 2013). A transformation of the healthcare system in Turkey was launched in 2005, and primary healthcare services began to be provided by general practitioners (GPs) known as *family physicians*. Each family physician serves a population and is paid by the state per capita. If people are not satisfied with their family physicians, they can change them. These circumstances lead to *demanding patients* and *submissive doctors*. Further, many medicines, such as antibiotics, can be bought over the counter, and it is customary in Turkey to use such medicines according to third-party recommendations (e.g., friend, relative). Additionally, all vitamins, dietary supplements and herbal products are included in OTC medicines.

Multiple underlying factors (e.g., economic, educational, and sociocultural) lead to the irrational use of medicines. Inadequate physician training is cited as one of the major factors governing this problem in Turkey (Akici et al., 2004).

This study aimed to investigate the impact of intervention training for family physicians to reduce OTC prescribing and it sought to assess the effectiveness, practicality, and acceptance of these interventions in a local setting in Turkey.

Subjects and Methods

Design

This feasibility study was designed as a cross sectional study, in light of the data obtained in the previous work packages of the OTC-SOCIOMED project. The OTC-SOCIOMED: Assessing the Over-the-Counter Medications in Primary Care and Translating the Theory of Planned Behaviour into Interventions (EU 7th Framework Project, no. 223654-06/05/08) was developed as a European Union project and was financed by the Seventh Framework Program (FP7). The aim of this project was to investigate the factors that influence prescribing OTC medicines and the irrational use of medicines in primary care settings in five Southern European countries. GPs and other primary healthcare workers are the first to make contact with patients; thus, they represent an appropriate population for such interventions (Hrisos et al., 2009). In the first phase, the observational findings of the project were used in planning the intervention training. In the second phase, implementation of the study and evaluation of the intervention were conducted. One to two primary health care areas in each of the five countries (Cyprus, Greece, Malta, France and Turkey) were selected for the pilot intervention. During November 2011 the implementation of intervention was done in Bursa, which was selected as study region in Turkey.

The theoretical framework of the study consisted of the theory of planned behaviour (TPB), which is a behavioural change model in general practice. According to the TPB, a person's intention for any behaviour is affected by perceptions, social pressures from the environment, and personal perceptions of behavioural control, and the person's intention is the most important predictor of his or her behavior (Ajzen I, 2011). This reasoning lies behind our hypothesis that planned training of physicians may change their intentions and prescription behaviour.

The details of the study, which was based on this theory, were presented in another article and will not be repeated here (Lionis et al., 2014).

Ethical approval was obtained in each country (TR no: 2010-6/1) from the local authorities and the National Bioethics Committees within the OTC-SOCIOMED Project framework. The study was

conducted in accordance with the Helsinki Declaration and was approved by the Ethics Committee of University of Uludag and during submission the approval form was provided.

Study setting

Bursa, one of the three regions of the previous execution of the OTC-SOCIOMED project, was selected as the area for the current study. Bursa is the fourth largest city in Turkey, and the population comprises primarily immigrants from across the country. Thus, this heterogeneous population could be accepted as representative of Turkey. Physicians were invited to participate in the study by an e-mail in which the study was briefly explained. A total of 29 volunteers from the first applicant volunteers were randomly divided into a control group of 14 and an intervention group of 15. However, one volunteer withdrew from the study for personal reasons. The control and study groups were selected from different family health centers to prevent the spread of information between groups. Informed consent was obtained from all GPs prior to their participation in the study.

Implementation of intervention

The three-step intervention used in this study was defined as an appropriate behavioural change model for primary healthcare based on the TPB (Conner et al., 1994). In the first step, participants were given a 1-day intensive course on rational prescribing; how to prevent patients from misusing OTC medicines; and developing cooperation strategies using various training techniques, including recreational activities, case discussions, lectures, and small-group workshops. There were five educators, of whom three were academicians in pharmacology and two were from family medicine. One of the pharmacologists specialized in OTC medicines.

The topic titles can be summarized as rational drug use principles, polypharmacy in the elderly, OTC medicines and interactions with other medicines, and food and herbal products. The second step, consisted of message reminders, such as e-mails and posters, that were created by the study group while brainstorming on topics such as rational prescribing, unnecessary OTC drug use, and patient safety. In the third step, trainers visited participants at their workplaces. During these visits, training reminders were provided via face-to-face interviews during the physician's daily practice. This stage lasted for 4 weeks

Instruments

Four different instruments were used before and after the intervention. All of the instruments were reviewed and culturally tested prior to their implementation in the study settings.

1. Training assessment questionnaire

Participants were given a questionnaire to evaluate the training program and to gain insight into their expectations. Responses were scored on a 7-point Likert scale (1 = strongly disagree; 7 = strongly agree), and the content of the program and the educators were assessed.

2. Complementary questionnaire on OTC medicines

In this questionnaire, physicians' attitudes toward OTC drugs and their recommendations in daily practice were studied with open- and closed-ended questions and real patient scenarios. Both groups completed the questionnaire before and after the intervention.

3. TPB questionnaire

This questionnaire was established based on findings that were obtained from a previously implemented FP5 project (the Research-Based Education and Quality Improvement Project). The questionnaire includes four questions that measure attitudes, three that measure social habits, three that measure planned behaviour control, and four that measure intentions. The questions were rated on a 7-point Likert scale. Participants were given a code at the beginning of the intervention to evaluate the questionnaires before and after the intervention.

4. Patient medication form

Physicians' records for five patients in both the intervention and control groups were examined. These patients were over the age of 60 and were given prescriptions for their chronic illnesses within two days before and after the training intervention.

Statistical evaluation

In this study, the appropriateness of the distribution sample size was observed for suitability features, and non-parametric tests were used. The Mann-Whitney U-test and Wilcoxon's test were used for the central distribution tables and prevalence measures. In all analyses, $P < 0.05$ indicated statistical significance. SPSS 19.0 software (SPSS, Inc., Chicago, IL, USA) was used for data entry and analysis.

Results

The OTC-SOCIOMED project publication consisted of results from five countries that participated in the study (Lionis et al., 2014). For interpreting the results, only fully completed questionnaires were included, and 23 cases from Turkey were included in those data. However, this article is intended for local interpretation of the data; thus, all participants were included in the analyses.

There were no significant differences between the intervention and control groups in terms of mean age (intervention group: 41.85 ± 2.44 years; control group: 43.64 ± 3.31 years), gender distribution, professional experience, or specialty.

All participants who worked with other physicians at family health centers had public status, and the mean population per physician was 3600 people (range: 2500–6000).

Assessment of training

Participants were generally satisfied with the quality of training, the delivery of topics from the educators, and the subsequent reminder messages (Table 1). However, they did not expect that their attitudes toward prescribing would change. Answers to the open-ended questions about their views on the training can be summarized as follows:

- 'Training should be given to all healthcare providers and should be repeated'.
- 'The Ministry of Health should support this training'.
- 'Training should be more comprehensive'.
- 'The duration of training is inadequate'.
- 'Questions on the questionnaire should be more comprehensive'.
- 'Reminders and posters were very informative; reminders should continue'.

– 'More focus should be given to current problems in prescribing'.

Table 1. Participants' evaluations of the training using a 7-point Likert scale

	Median	Range (Min–Max)
Please rate the quality of the seminar based the expectations you had before attending it.	7	5–7
Please rate the organization of the seminar.	7	5–7
Please rate the content of the seminar.	7	6–7
Please rate the quality of the speakers.	7	6–7
Do you believe that the seminar was applicable?	6	5–7
How you would rate the seminar for your future work?	7	6–7
Do you believe that the themes of the seminar changed your practice regarding the issue of prescribing?	6	3–7
Do you believe that the themes of the seminar changed your behaviour towards the use of non-prescription drugs?	6	3–7

Complementary questionnaire

When asked whether they found it important to include information about OTC use in their consultations, nearly all of the physicians said 'yes' (92.3% pre-intervention; 100% post-intervention) in certain consultations or in specific populations. They stated that the most common reasons for not talking with patients about OTC medicines were insufficient time, insufficient knowledge, and not believing in their ability to change patients' attitudes (Table 2).

When we evaluated the physicians' prescribing behaviours in the first two given scenarios, most of their attitudes were against prescribing, but they would do so if another doctor had already initiated the medication after informing the patient of the potential risks. Nearly all stated that they would make time for patients who requested information (Table 2).

Table 2. Responses to the complementary questionnaire

	Intervention Group		Control Group	
	BT*	AT**	BT*	AT**
	n (%)	n (%)	n (%)	n (%)
Do you think it is important to include information about OTC use in your consultations? How often?				
In each consultation	7 (50.0)	8 (57.0)	3 (21.4)	3 (21.4)
In certain consultations	4 (28.5)	4 (28.5)	4 (28.5)	4 (28.5)
Only in specific populations	3 (21.4)	2 (14.2)	3 (21.4)	7 (50.0)
Why do you think patients use OTC drugs?				
Easily available	8 (57.0)	7 (50.0)	7 (50.0)	7 (50.0)
They are safe because they are so easily available	8 (57.0)	10 (71.4)	3 (21.4)	5 (35.7)
Pharmacists can make proper suggestions based on symptoms	9 (64.2)	12 (85.7)	12 (85.7)	9 (64.2)
The patients save time and money compared to a doctor's visit.	3 (21.4)	3 (21.4)	5 (35.7)	6 (42.8)
Could GPs have an essential role in consulting and changing patients' attitudes toward OTC use?				

Yes	12 (85.7)	12 (85.7)	14 (100)	11 (78.5)
No	1 (7.1)	1 (7.1)	0 (0.0)	0 (0.0)

You have a patient who often uses OTC drugs, exchanges medicine within the family and with neighbors and friends or consults the pharmacist and purchases drugs without a prescription? What do you do in this situation?

Inform the patient immediately of the dangers that can occur from this behaviour	13 (92.8)	12 (85.7)	12 (85.7)	8 (57.0)
Inform a family member of the patient's behaviour	0 (0.0)	0 (0.0)	0 (0.0)	1 (7.1)
Continue to follow the patient's health and intervene when necessary	1 (7.1)	4 (28.5)	2 (14.2)	0 (0.0)

Why do you think it is important to control OTC medicines?

It is important for patient safety	14 (100)	14 (100)	14 (100)	14 (100)
It is important to reduce government spending	9 (64.2)	5 (35.7)	5 (35.7)	2 (14.2)
I do not think it is important because there are no risks from use	1 (7.1)	0 (0.0)	0 (0.0)	1 (7.1)
I do not think it is important	0 (0.0)	0 (0.0)	0 (0.0)	1 (7.1)

Why do you think that doctors do not investigate the consumption of OTC medicines with their patients and do not provide adequate information?

It is not considered important	1 (7.1)	8 (57.0)	2 (14.2)	2 (14.2)
There is insufficient knowledge	3 (21.4)	4 (28.5)	1 (7.1)	3 (21.4)

The patients will not change their attitudes either way	3 (21.4)	1 (7.1)	4 (28.5)	3 (21.4)
Not enough time	7 (50.0)	6 (42.8)	8 (57.0)	11 (78.5)
With which people can you collaborate to control OTC abuse?				
Other physicians	5 (35.7)	3 (21.4)	5 (35.7)	5 (35.7)
Other healthcare providers, i.e., nurses	1 (7.1)	3 (21.4)	1 (7.1)	4 (28.5)
Pharmacists	4 (28.5)	4 (28.5)	2 (14.2)	5 (35.7)
Patients	3 (21.4)	3 (21.4)	2 (14.2)	4 (28.5)
All of the above	6 (42.8)	9 (64.2)	8 (57.0)	8 (57.0)
A patient visiting your health center asks you to prescribe him/her medicines he/she has already purchased from the pharmacy without a prescription. What do you do in this situation?				
You prescribe it	0 (0.0)	0 (0.0)	1 (7.1)	0 (0.0)
You prescribe it after explaining the potential risks	1 (7.1)	1 (7.1)	1 (7.1)	1 (7.1)
You prescribe it for the last time, after explaining the potential risks	4 (28.5)	5 (35.7)	9 (64.2)	8 (57.0)
You do not prescribe it	9 (64.2)	8 (57.0)	3 (21.4)	5 (35.7)
When, instead of the patient, a third person (relative, friend, etc.) visits your health center asking you to prescribe medicine that was already purchased from the pharmacy without prescription, what do you do in this situation?				
You prescribe it	1 (7.1)	0 (0.0)	0 (0.0)	0 (0.0)

You prescribe it after explaining the potential risks related with the consumption of this medicine to the third person	0 (0.0)	2 (14.2)	1 (7.1)	1 (7.1)
You ask for the patient who wants the prescription to come	4 (28.5)	3 (21.4)	6 (42.8)	3 (21.4)
You do not prescribe it	9 (64.2)	9 (64.2)	7 (50.0)	10 (71.4)
A patient suffering from a chronic disease is visiting you at the health center. Do you spend time discussing the medicines you prescribed?				
Yes, always	8 (57.0)	11 (78.5)	8 (57.0)	7 (50.0)
No, it is not necessary because the medication is familiar to the patient	0 (0.0)	0 (0.0)	0 (0.0)	1 (7.1)
Only when something changes in the patients' health condition	3 (21.4)	3 (21.4)	6 (42.8)	6 (42.8)
No, because of limited time	3 (21.4)	0 (0.0)	0 (0.0)	0 (0.0)
A patient visiting you at the healthcare center for a regular examination is asking you to prescribe him/her medicine that another doctor has suggested. What do you do in this situation?				
You prescribe it without any comments	4 (28.5)	1 (7.1)	2 (14.2)	3 (21.4)
You prescribe it after informing him/her of the potential risks of drug interactions	8 (57.0)	9 (64.2)	10 (71.4)	7 (50.0)
You prescribe it if you contact the doctor who suggested	0 (0.0)	1 (7.1)	1 (7.1)	1 (7.1)

the medication				
You do not prescribe it	2 (14.2)	3 (21.4)	1 (7.1)	3 (21.4)

BT*: beginning of the study; AT**: end of the study.

TPB questionnaire

In the assessments before and after the training, there were no differences in physician attitudes, subjective norms, or intentions. The only difference noted was on one item (question 14: 'The decision to prescribe/recommend medication is entirely up to me'), which evaluated behaviour control in the intervention group after training ($P < 0.05$) (Table 3). There was no significant difference in the control group for answers to the same question before and after the training ($P > 0.05$).

Table 3. Physicians' attitudes, subjective norms, planned behaviour control, and intentions scores from the TPB questionnaire before and after training

	Control group (n = 14)			Intervention group (n = 14)		
	Before training	After training	*P* value[a]	Before training	After training	*P* value[a]
Attitude						
Q3	4.64 ± 2.53	4.71 ± 1.20	0.972	5.21 ± 1.19	4.46 ± 1.71	0.358
Q4	4.57 ± 1.91	4.07 ± 1.49	0.430	3.50 ± 1.29	3.77 ± 1.24	0.780
Q5	4.00 ± 2.35	3.71 ± 1.38	0.670	3.71 ± 1.38	4.00 ± 1.29	0.573
Q6	4.36 ± 2.47	4.86 ± 1.10	0.724	4.93 ± 1.54	4.77 ± 1.09	0.857
Subjective norm						

Q10	4.43 ± 1.65	4.43 ± 2.06	0.937	5.00 ± 1.30	4.62 ± 1.26	0.427
Q11	4.36 ± 2.10	4.36 ± 2.31	0.964	5.14 ± 1.99	4.15 ± 1.57	0.191
Q12	5.14 ± 1.56	5.79 ± 0.70	0.135	6.00 ± 0.88	5.62 ± 0.87	0.364
Planned behaviour control						
Q13	6.07 ± 1.14	5.79 ± 1.12	0.449	5.29 ± 1.14	6.15 ± 0.90	0.058
Q14	6.07 ± 1.21	5.86 ± 0.77	0.584	5.07 ± 1.38	5.85 ± 1.14	0.031*
Q15	6.21 ± 0.80	5.79 ± 1.31	0.417	4.85 ± 1.28	5.46 ± 0.97	0.135
Intention						
Q20	4.85 ± 1.46	5.64 ± 1.55	0.279	4.36 ± 1.29	4.38 ± 2.02	0.837
Q21	3.69 ± 1.97	4.71 ± 1.59	0.053	4.29 ± 1.73	4.46 ± 1.51	0.641
Q22	4.15 ± 1.86	4.07 ± 1.38	0.804	5.00 ± 0.96	4.38 ± 1.26	0.252
Q24	7.00 ± 2.41	6.14 ± 1.10	0.183	7.43 ± 1.16	6.38 ± 1.85	0.203
Q25	3.17 ± 2.62	2.29 ± 2.09	0.357	5.00 ± 2.32	3.77 ± 3.32	0.306

[a]Wilcoxon test

Data are presented as the mean ± standard deviation.

*$P < 0.05$

Medical records

The physicians' medical records were evaluated through their prescriptions. In the intervention group, 242 drug prescriptions were written for 207 diagnoses before training and 173 prescriptions were written for 163 diagnoses after training. In the control group, the physicians prescribed 279

prescriptions for 226 diagnoses before training and 214 prescriptions for 194 diagnoses after training. A slight decrease in the number of medicines prescribed after the intervention was noticeable, but the difference was not statistically significant ($P > 0.05$).

Discussion

In the primary healthcare system, both patients' expectations and physicians' attitudes are responsible for irrational prescribing and the misuse of OTC medicines (Akici et al., 2004; Otoom et al., 2006). Inappropriate usage of medicine leads to increased drug costs attributable to the increased hospitalizations caused by drug–drug interactions and side effects that put patients' health at risk; these factors create a two-way burden on healthcare expenditures.

Multiple studies have been conducted to address irrational prescribing and the effects of physician education on prescription attitudes. Continuing education in the primary healthcare system demonstrated up to 75% effectiveness (Forsetlund et al., 2009; Arnold et al., 2005). Multifaceted interventions in which physicians, patients, and the community are selected as target groups have been demonstrated as most effective (Arnold et al., 2005). Interventions aimed at patients and reminders to physicians have been viewed as the most promising methods (Yourman et al., 2008).

The delivery of health services in Turkey together with a shift toward prioritizing primary healthcare and family medicine practice in the country began within the last decade. In support of this process, various continuing medical education programs for family physician planning are on the agenda. In this study, a strong theoretical basis for physician education to improve irrational prescribing, one of the major problems faced by primary care physicians, was evaluated. The physicians were satisfied with the training, and they gave high scores for its content and quality. However, in the open-ended questions, they also noted that the training duration was insufficient, and they suggested that it should be repeated. There were no significant differences in the physicians' attitudes, subjective norms, or intentions following the intervention; however, there was a significant increase in the judgment 'The decision to prescribe/recommend medicine is entirely up to me', which could be considered the initial step in an attitude change in these physicians.

The burden of daily routines, inadequate time, and ineffective communication and coordination between healthcare practitioners, in addition to patients' self-treatment with OTC medications,

were indicated as the main reasons for polypharmacy in previous studies (Thomsen et al., 2007). Most GPs do not examine half of the patients they see each day, they do not inform the patients about their diagnoses, and they do not mention non-drug treatments (Akici et al., 2007). Similar results were obtained in our study. When participating physicians were asked about the most important factor in OTC misuse, they stated that time was a problem. They also felt that they had insufficient knowledge, and they did not believe they could change patients' attitudes.

Some studies have indicated that GPs do not consider themselves sufficiently competent to terminate medications initiated by specialists (Conner, 1995; Carey et al., 2008). Only one-third of physicians informed their patients about this subject at each interview. Similarly, after the intervention, the physicians' responses to questions evaluating their attitudes using real patient scenarios indicated a tendency in the study group to turn down the requests of patients and third parties but to prescribe drugs suggested by other doctors.

Although the results were not as expected as from the literature, the intervention method that was used in this study was demonstrated as efficient and useful because of its multilayer approach in the previous studies. In our opinion, the underlying causes of this situation were that the intervention took place only once and that the duration was short. In addition, this study's objectives did not include investigating other organizational and political factors, such as primary care physicians' intensive workloads or their feelings of having to force themselves to satisfy all patient expectations.

This study demonstrated that family physicians are aware of their own training needs. The training method was acceptable and satisfactory. However, to effectively modify physicians' behaviours, as proposed in the literature, the training should be longer and should be repeated regularly.

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The effect of diet control and physical activity for 10 weeks on the body mass index lipid profile in a group of human subjects

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Abstract

The combined effects of diet and exercise leads to a change in body fat and lipid profiles**.** To investigate the influence of combined dietary control and physical activity post 10 weeks of interventions on the body mass index (BMI) and lipid profiles. Twenty subjects (16 female) were involved post ethical approval. Anthropometric measurements (height in cm and weight in kg) were taken. The basal BMI was calculated and the basal values for the lipid profiles were measured: high density lipoprotein (HDL), low density lipoprotein (LDL), triglycerides (TG) and total cholesterol (TC). Three days of dietary recall was conducted and thereby the diet control was made. Post 6 and 10 weeks, the BMI was calculated again while the lipid profile fractions were investigated at the 10th week. The level of physical activity was assessed at the 9th week using physical activity questionnaire. Data collected were analyzed using SPSS software. A significant decrease in BMI between basal value and 6th week (26±5 Vs 25±6; P=0.019), the 6th week and the 10th (25±6 Vs 24±5;P=0.019) and basal value and the 10th week (P=0.001). Compared to basal value, the 10th week showed an increase in HDL, a significant decrease in TC (P=0.017) and a decrease in LDL, TG (non significant). The sample population do spend more time on moderate activities (55 minutes/ 5 days-week) compared to vigorous activities (40 minutes/ 2 days – week). Dietary control programs prepared by dieticians combined with participation in structured physical activities packages build by physical trainers and observed by sports medicine physician should be established.

Keywords: Diet control, Physical activity, Body mass index, Lipid profile

INTRODUCTION

Generally, physical inactivity and overweight and / or obesity are among major public health and clinical problems in modern societies (Lakka et al, 2005). The authors stated that sedentary lifestyle, unhealthy diet, and obesity markedly increase the risk of cardiovascular diseases. Actually, the excess weight is due to imbalance between physical activity and dietary energy intake (Lakka et al, 2005).

In literature, it was reported that the excess in body weight is associated with cardiovascular diseases (CVD) and increased morbidity and mortality rates (Poirer et al, 2001). In fact, the regular physical activity is accepted as a factor that reduces all-cause mortality and improves a number of health outcomes (Sesso et al, 2000; Kesaniemi et al, 2001). In this context, various studies have demonstrated that the low levels of habitual physical activity are associated with increased all cause mortality rates (Paffeenbarger Jr et al, 1986; Blair et al. 1989; Hahn et al. 1990,; McGinnis et al. 1993).

Lipid profile is a panel of blood tests that serves as an initial broad medical screening tool for abnormalities in lipids, such as cholesterol and triglycerides (TG). The National Cholesterol Education Program (NCEP) reported that the analysis and thereby the results of the lipid profile can determine approximate risks for cardiovascular disease and other diseases (NCEP, 2002). Medically, unfavourable lipid profile is associated with developed CVD (Moraleda et al, 2013). In contrast, Caro et al (2013) concluded that moderate regular physical activity is associated with an improved lipid profile. Alongside, current guidelines from NCEP to maintain plasma lipids in desired levels do involve weight reduction, physical activity, and decreasing the consumption of total fat, saturated fat and cholesterol in diet (NCEP, 2002).

In order to improve the lipid profile parameters and weight loss, life style changes and behavioural modifications is the main current recommendation. Leblanc et al (2011) stated that populations particularly those at health risk should be encouraged to be involved in programs for weight loss and physical activity. In a meta-analysis study, the authors concluded that an improvement in dietary habits would significantly improve CVD risk factors, namely lipid profiles (Banel et al, 2009).

In literature, various studies have been conducted in order to evaluate the combined effect of dietary control, and exercise on the lipid profile and body mass index. Among those, Volpe et al (2006) concluded that the supervised exercise program combined with nutritional modifications was effective in obtaining a significant body weight loss among sedentary overweight and women. Beside, Weight-loss interventions using a dietary restriction regime that is accompanied by a participation in exercise are associated with moderate weight loss at 6 months. In the latest study, an advice-only about the reduction of energy intake and exercise-alone groups experienced minimal weight loss at any time point (Franz et al, 2007).

Taken altogether, the hypothesis of this study claimed that there is a positive impact on the lipid profile and BMI post 10 weeks of combined interventions of exercise and dietary control. Hence, this study aimed to investigate the influence of 10 weeks of interventions of the combined effect of both exercise and dietary control on lipid profiles and BMI.

MATERIAL AND METHODS

Ethics:

A volunteer information sheet was given to all intended population for the participation in the study. This was in order to clarify the aims of the research and its possible positive consequent effects. A consent form was signed by 60 subjects agreed to take part in the study and did agree to attend the preliminary tests session. All subjects were recruited randomly. At the first meeting, full detailed answers to all questions by the participants and an explanation of the experimental protocol were given. Furthermore, a health questionnaire was filled by all volunteers that was followed by the measurement of blood pressure (BP).

Inclusion and exclusion criteria:

Any history of heart disease, sudden cardiac death, high BP or a medication that alters the cardiovascular system (CVS) was excluded. As well, any reported high BP at the first meeting was excluded.

Subjects:

A cross sectional study was conducted at Benghazi University from April to the end of June 2013. 20 healthy volunteers (16 females) were involved in the statistical analysis as they have completed the experimental protocol. The mean age of the volunteers was 25±7 years.

Protocol:

The anthropometric measurements were taken from all volunteers. These include height (cm) and weight (kg) which allow us to calculate the basal BMI (before interventions) for each participant. This allow the workers to categorize the subjects into 4 groups based on the basal BMI: under nutrition, normal, overweight and obese. Consequently, all participants underwent biochemical investigations for the lipid profile (basal values) which did involve: serum high density lipoprotein (HDL), low density lipoprotein (LDL), triglycerides (TG) and total cholesterol (TC).

All participants were asked to record their diet for 3 days in order to manipulate the diet. The dietary manipulation was conducted via using series of energy calculation equations based on previously stetted BMI categorizations. The proposed recommended energy expenditure (REE) value in kilocalories was calculated based on the height, weight and age for each participant. Subsequently, calculated values using standard energy equations (i.e. keeping the same or adding way of 500 kcalories) were used under and normal groups. On the other hand, the proposed total energy expenditure (TEE) value in kilocalories was calculated based on the height, weight and age for each participant. Consequently, calculated values using standard energy equations (i.e. subtracting way of 500 or 330 to 500 kcalories) were used for over weight and obese.

All participants were asked to start consuming the controlled diet and start doing physical activity for 10 weeks according to available facilities and their interest. The level of the physical activity was assessed subjectively using self prepared physical activity questionnaire at the 9th week of the study. Consequently, the time spending on activities by all subjects were categorised under two main classes: moderate and vigorous. Over the 10 weeks of the protocol, height, and weight was measured and thereby BMI was calculated on the 6th and the 10th weeks of the study. In addition, the lipid profile measurements were evaluated for the second time at week 10.

Over all, there were basal, 6th and 10th week's values for BMI. In addition, there were basal measurements and 10th week values for the lipid profile. The level of the physical activity was

assessed at the 9th week. Based on the subjective answers of the participants, and the classification of activities in the previous reports such as Sabia et al (2012), the time spent on the main two types of activities either moderate or vigorous was reported.

Statistical analysis:

Data which collected were organized in excel sheet and thereby uploaded to SPSS software – version 16. Simple analytical statistics were applied. Data were presented as means and standard deviations (±). Paired t-test (dependent sample) between values of BMI and lipid profile at different time points (i.e. basal, 6th and 10th weeks) was applied. The level of significance was set up at ≤ 0.05.

Results

A- BMI

The mean height of the involved participants was 165± 8 (cm) whereas the mean weight was 71± 16 (kg). The calculated basal BMI was 26± 5. Significantly, there was a decrease in BMI at 6th week compared to the basal measurement (25.5± 6 Vs 26± 5; P= 0.013) post combined interventions (i.e. dietary control and exercise participation). Similarly, there was a significant decrease in BMI at the 10th week compared to the basal value (24.9± 5 Vs 26± 5; P= 0.001) post combined interventions. Compared the BMI at 10th week with the 6th week, there was a significant decrease (P= 0.019) post interventions. Table 1 shows the results.

Table 1: BMI at basal, 6th and 10th weeks time points

Measurement	Result
BMI (basal)	26± 5
BMI (6th week)	25± 6 *
BMI (10th week)	24± 5**/***

*significant between basal and 6th weeks (P=0.013), **significant between 6th and 10th weeks (P=0.019), ***significant between basal and 10th weeks (P=0.001)

B- Lipid profiles

Table 2 shows that there was a non significant (NS) increase in HDL at 10th week post dietary control and exercise compared with the basal value (63±15 Vs 61±14, P = 0.432). On the other hand, there was a decrease in LDL at the 10th week post the combined interventions compared with the basal value (70±25 Vs 73±20, P=0.520).

Examining the changes of TG between the basal and the 10th weeks post interventions, there was a NS decrease at the 10th week compared to basal measurements (70±33 Vs 72±19, P= 0.487). Significantly, TC reported a decrease at the 10th week compared to the basal measure post combined interventions (127±36 Vs 147± 29, P= 0.017). Table 3 shows the results.

Table 2: changes from basal to the 10th week in HDL and LDL post combined interventions

	Basal	**10th week**
HDL	61± 14	63± 15
LDL	73± 20	70± 25

Table 3: changes of TG and TC from basal to 10th week post combined interventions

Measure	**Basal**	**Week 10**
TG	72± 19	70± 33
TC	147± 29	127± 36*

*sign of significance

Compared to vigorous activities (Karate, running, and jumping), subjects do spent more time in moderate ones (walking fast, and bicycling) (55 minutes five days / week Vs 40 minutes –two days/ week).

Discussion:

The main results of this work were a significant decrease in BMI at 6th and 10th weeks compared to the basal measurements. Although there was a non significant decrease in LDL and TG at the 6th week contrasted to the basal values, both are considered as a desired changes that would influence the individual's health and decrease the CVD risks. Noticeably, our results showed a significant decrease in the TC and the sample population do spend more time on moderate activities rather than vigorous ones.

It well known that obesity is an important public health problem that is associated with multiple chronic health conditions including heart disease, hypertension, hyperlipidemia, diabetes, hyperinsulinemia, and cancer (Layman et al , 2005). It is acceptable to consider that BMI is a proxy measure of obesity instead of measures of body composition (e.g. percentage of body fat) or body fat distribution (Heitmann et al, 2000). In this context, it was recommended for adults who are overweight or obese to reduce daily energy intake and increase physical activity (Layman et al, 2005). In our study, the BMI did decrease significantly post 10 weeks of combined dietary control and exercise interventions at both the 6th and 10th weeks compared to the basal measure. In agreement, Lakka et al (2005) stated that optimal approach in weight reduction programs appears to be a combination of regular physical activity and caloric restriction.

As was stated, obesity is a chronic metabolic disorder associated with CVD and increased morbidity and mortality. Poirier et al (2001) mentioned that there is strong evidence that weight loss in overweight and obese individuals improves risk factors for many health problems as diabetes and CVD. Accordingly, the noticeable and significant decreases in BMI in our work post the combined interventions at 6th and 10th weeks would be considered of valuable clinical importance. In reality, it is essential for primary care physicians to evaluate obesity because it is associated with higher mortality and comorbid conditions (e.g. diabetes mellitus, hypertension) (Jarolimova et al, 2013). Furthermore, the strategies those involve nutritional programs for dietary

control and encouragement for participation in physical activity should be established (Jarolimova et al, 2013).

Data available in the literature showed that different randomized controlled trials addressed the combined effects of aerobic exercise and diets aimed at improving in lipid profiles; TC, LDL, HDL and TG in adults have reached conflicting conclusions (Agurs-Collins. T et al, 1997; Anderssen. S et al 2005; Arciero.P et al, 2006; Avila.P et al, 1994; Hagan.R et al, 1986; Hirose.K et al, 2002; Hopewell.R, 1989;McAuley. K et al, 2002; Miller.R et al, 2002; Nieman, 2002).

In fact, the decrease in HDL is considered as a major risk factor for CHD (Nieman et al, 2002). It was reported that exercise when combined with an energy-restricting diet has been found to attenuate the decrease in HDL that occurs with weight loss (Willams PT et al, 1994; Leaf DA et al, 1997; Nieman et al, 1990; and wood PD, 1994). This is in support to our results which showed that there was a non significant increase post 10 weeks of interventions in HDL level. Likewise, combination of dietary control, and exercise elevate the level of HDL to a modest degree (5-10%) (NCEP, 2002). Similarly, various studies demonstrated positive correlations between the changes in body weight and HDL (Sallinen et al, 2007; Vincent et al, 2003). In contrast, Kelley et al (2012) concluded that concurrent aerobic exercise and diet are associated with improvements in TC, LDL, and TG, but not HDL in overweight and obese adults.

Numerous studies have concluded that moderate exercise training has little effect on TC and LDL unless combined with dietary control regimen (Willams PT et al, 1994; Leaf DA et al, 1997; Nieman et al, 1990; and wood PD, 1994; Dengel DR et al, 1994). Clinically, it is acceptable to state that as the level of total cholesterol and LDL-cholesterol rises, the risk of coronary artery disease increases. Vatansev et al (2010) stated that every 1% decrease in the level of LDL-cholesterol lowers 2% the risk of the coronary artery disease (CAD) occurrence. Although our results illustrated a significant decrease in TC at the 10^{th} week compared to the basal measure post combined interventions (P= 0.017), there was a non significant decrease in LDL at the 10^{th} week post the combined interventions compared with the basal value (NS). These results are of significant clinical importance as the decrease in LDL cholesterol, triglycerides levels, and increases in HDL cholesterol levels would decreases the risk of cardiovascular disease (C.Maffeis, 2001, A.Sarria , 2001; Kelly et al, 2012).

Actually, physical inactivity is the most important cause of the development of obesity. In contrary, exercises cause positive changes in lipids and lipoproteins (Vatansev et al, 2010). The latest authors mentioned that the diet program combined to exercise program will provide more productive results with obese people.

As sever type of exercises pose a risk, the American Heart Association, the Centers for Disease Control and Prevention and the American College of Sports Medicine (ACSM) all recommend regular physical activity of moderate intensity for the prevention and complementary treatment of several diseases (Agrwal, 2012). In fact, The ACSM recommends that most adults should engage in moderate intensity training for ≥ 30 min·d on ≥5 d·wk for a total of ≥150 min·wk in order to develop and maintain cardiorespiratory, musculoskeletal, and neuromotor fitness (Garber et al, 2011). In our study, subjects do spent more time in moderate activities (e.g. walking fast, and bicycling) (55 minutes five days / week Vs 40 minutes –two days/ week) compared to vigorous ones (e.g. karate, running, and jumping). Caro and colleagues (2013) concluded that moderate regular physical activity is associated to higher insulin sensitivity and improved lipid profile.

This study has two limitations. Firstly, the sample number is small and further studies should look at larger number of participants. Secondly, the assessment of the level of physical activity was subjective based on the answers of the participants.

In conclusion, physical activity causes favourable changes on lipid profiles and BMI that was pronounced by a combined dietary modification. Basically, exercise program accompanied with dietary control makes the individuals feel psychologically good, healthy and safe from atherosclerotic risk factors of obesity. In other words, diet program in addition to exercise program will provide more fruitful results with obese people.

Authors contributions

Dr. Issam Denna formulate the idea , designed and managed the study, performed statistical analysis, supervised whole process and revise the final manuscript . Dr Safaa badr help in drafted the manuscript, advised on the interpretation of the results, and revising the collected literature. Others (Ali.N, Alfergani.Z, Jewily.K, Almajouk.S A) help in data collection, entry,

reviewing the literature and helping in statistical analysis . All authors have read and approved the final manuscript. There was no conflict of interest.

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Education for radiological technologist and his place in mammography diagnostic method

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Abstract

Mammography is one of the screening methods for detection breast cancer. It is made by protocols for this disease involved from Health system. Low economy countries does not have those possibilities. Screening method can be used in rural area with portable equipment and good trained radiology technologists. The aim of our investigation was to determinate frequentation of done mammography in radiology department, like a basis for education of radiological technologist. We have done retrospective analyze of frequentation of mammography and mastectomy in last three years in Clinical hospital-Bitola. Frequentation of 2373 patients for three last years is showing high number of diagnosed and treated breast cancer population. Radiological technologists are involved in the process of diagnosing and treating and also can learn by experts. Mammography is not high significant like MRI, and have dose of radiation, but with exactly created protocol, can be used for screening in every hospital. University educated Radiology technologist can make some diagnostic methods in rural areas without supervision of doctor. Education of those staff has huge economic benefits for society.

Keywords: breast cancer, mammography, radiology technologist.

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Introduction

There are about 1.38 million new cases and 458 000 deaths from breast cancer each year (IARC Globocan, 2008). Breast cancer is by far the most common cancer in female population worldwide, both in the developed and developing countries. In low- and middle-income countries the incidence has been rising up steadily in the last years due to increase in life expectancy, urbanization and adoption of western lifestyles. [WHO, National Cancer Institute of Canada. Canadian Cancer Statistics. NCIC; Toronto. 2006]

Currently there is not sufficient knowledge on the causes of breast cancer, therefore, early detection of the disease remains the cornerstone of breast cancer control. If breast cancer is early detected, and if adequate diagnosis and treatment are available, there is a good chance that breast cancer to be cured. If detected late, curative treatment is often no longer an option. In these cases, palliative care to relief the suffering of patients and their families is needed.

The majority of deaths (269 000) occur in low- and middle- income countries, where most cases of breast cancer are detected and diagnosed in late stages due mainly to lack of awareness on early detection and barriers to health services.[Coldman, 2006]

WHO promotes comprehensive breast cancer control programs as part of national cancer control plans. The recommended early detection strategies for low-and middle- income countries are awareness of early signs and symptoms and screening by clinical breast examination in demonstration areas. Mammography screening is very costly and is feasible only in countries with good health infrastructure that can afford a long-term program. [Yaffe, 2004]

Every year, breast cancer kills more than 500,000 women around the world. In resource-poor settings, a majority of women with breast cancer are diagnosed at an advanced stage of disease; their five-year survival rates are low, ranging from 10-40%. In settings where early detection and basic treatment are available and accessible, the five-year survival rate for early localized breast cancer exceeds 80%. Breast cancer can be detected early through two strategies: early diagnosis and screening. Early diagnosis is based on improved public and professional awareness of signs and symptoms associated with cancer; it entails recognizing possible warning signs of cancer and taking prompt action.

Screening involves the systematic use of testing, such as mammography, across an asymptomatic population to detect and treat cancer or pre-cancers.The educational program for radiological

technologist in our High Medical School, gives special attention on mammography. Mammography for women under 30 years of age has an unfavorable benefit:risk ratio due to the challenges of detecting cancer in younger breasts, the aggressiveness of cancers at this age, the potential for radiation susceptibility at younger ages and a greater cumulative radiation exposure. Mammography when used in combination with MRI for women who carry strong breast cancer susceptibility (e.g., BRCA1/2 carriers), which if begun at age 35 and continued for 35 years, may confer greatly improved benefit: risk ratios which were estimated to be about 220 to one. While there is considerable uncertainty in the risk of radiation-induced breast cancer, the risk as it is expressed in published studies is almost certainly conservative as the radiation dose absorbed by women receiving mammography recently has been substantially reduced due to newer technology.

The aim of our investigation was to determine frequentation of done mammography screenings in radiological department, like a basis for education of radiological technologist, and to access the morbidity of breast cancer population surgery treated in our Clinical hospital Bitola.

Material and method

We have collected data and make one retrospective analyze from administrative documents and protocols of Radiological and Surgery department in Clinical hospital Bitola. It is a base for practical education for our students. We have investigated frequentation of patients by age and sex, who have done mammography in last 3 years, and who had mastectomy. We have used statistical method T-test, with significance $p<0.05$.

Results

Frequentation of patients who had made mammography by sex is showing in table 1.

Tab.1 Mammography diagnostic method in last three years

Year	Men	%	Female	%	Total	%
2011	43	5.7	711	94.3	754	32
2012	66	8.7	688	91.3	754	32
2013	41	4.7	824	95.3	865	36
Total	150	6.3	2223	97.3	2373	100

The most of them were female 97.3% and it is demographic characteristic of it in worldwide.

Tab.2 Frequentation of surgery treated patients after mammography

Age	N	20-29	30-34	35-45	45-54	55-64	65-74	>75
2011	754	7	8	101	172	234	157	75
2012	754	0	13	74	192	231	169	75
2013	865	0	2	49	172	309	190	143
Total	2373	7	23	224	536	774	516	293
%	100	0.3	0.9	9.4	23	33	22	12

The most of patients treated with mastectomy (33%) was on age 55-64 years, and 66% were in working condition before treatment.

Discussion

Breast cancer is by far the most common cancer among women population worldwide, both in the developed and developing countries. In low- and middle-income countries the incidence has been rising up steadily in the last years due to increase in life expectancy, increase urbanization and adoption of western lifestyles. Mortality rate in Macedonia was for 2000 year, on 100 000 population 134.1, and for 2012, was 146.4 on 100 000. [www.WHO.cancer.morbidity]

Women at high risk for breast cancer are defined as genetic carriers of the more commonly known breast cancer genes (BRCA1, BRCA2 TP53), first degree relatives of carriers, women with varying degrees of high risk family histories, and/or women with greater than 20% lifetime risk for breast cancer based on existing risk models. Genetic carriers for this disease, primarily women with BRCA1 or BRCA2 mutations, have a lifetime probability of approximately 85% of developing breast cancer.[Kriege et all. 2004]

Preventive options for these women include surgical interventions such as prophylactic mastectomy and/or oophorectomy, i.e., removal of the breasts and/or ovaries. Therefore, it is important to evaluate the benefits and risks of different screening modalities, to identify additional options for these women. Those surgical interventions are practiced in clinical hospital-Bitola.

Screening mammography is effective in women aged 50 years or over. It is not recommended for average risk women under the age of 50 years. Macedonian health system ensures to women sonography every year, and on every two year with mammography, after age of 50. How those methods are significant is not question and aim in our research.

Macedonia like a middle economic developed country has a health system for early screening of patients with breast cancer. Therefore, screening modalities other than mammography require assessment, particularly as there may be alternative screening options for certain subgroups of women. Mammography equipment is installed in every regional Clinical hospital, and examination is regulated with health system and law [Warner et 2004]. The most of patients are female 97%, and it is similar with compared studies who analyze the disease by sex. MRI is more significant diagnostic method, with low dose of radiation, but there is a price of examination, [Kriege, 2004; Berrington de 2005; MARIBS Study Group 2006]. Mammography by itself has dose of radiation, for that reason has special protocols for screening in our health system. [Mattsson & Rutquvist 2000; law et 2007, Law & Faulkner 2001] Patients with out of high risk are screened with sonography. It can be made from doctors of different specialties too [Law & Faulkner 2002]. Mammography itself can be a risk for radiation and breast cancer too. [Law & Faulkner 2002, NRPB, 2005]

The objective of our study was frequentation of done mammography and mastectomy in our Clinical hospital Bitola. Students educated at High Medical School, and basis for practice Clinical hospital Bitola, have a possibility to learn from radiological experts and new equipment. Graduated students, can and are able to work in their hometowns and be a part of radiological diagnosing team. They can make alone mammography examination in rural places with portable machines. The target population of their work can be women at high risk for breast cancer in rural area.

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Level of knowledge about the use of hospital information systems to health care personnel in hospital practice

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ABSTRACT

The objective of this paper is to compare possibilities of level and use of knowledge of hospital information system by staff employed in hospital gynecological department of public health and private gynecological hospital staff. For material of work, data from the implementation of the applicative software solutions in 2 health institutions is used, which is easy to use and capable of processing large volume of information. Prospective work method is applied with implementing an anonymous questionnaire and the research period of surveying the respondents is from 05/01/2013 to 01/06/2013. Based on the research it is concluded that despite the implemented specific hospital information systems in the both institutions, there are flaws in the everyday work. In P. H. I. Clinical hospital "Dr. Trifun Panovski" - Bitola, there is no access to a computer at the most of the workplaces and almost never the Internet is used in the daily work of the health care personnel. Also, the networking with the other departments and taking certain data between the health care staff did not work at all, as well as the ability for connectivity between institutions and data use. At Special hospital for gynecology and obstetrics and I. V. F. center for assisted and human reproduction P. H. I. Hospital "Plodnost" - Bitola, there is a better access to information and network connectivity among departments, which of course is due to the younger age structure of the health care personnel, especially at the wider opportunities for education and the nurses. The health care system and the information technology are closely related and in future the functioning of the medical staff will not be possible, without continuous use of health care information systems.

Keywords: Hospital information systems, health care personnel.

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INTRODUCTION

Hospital information systems are part of a comprehensive implemented health information system. With their use of a fast and simple way, they can gather information and implement an analysis of the operation of the hospital system as a whole, as well as its individual segments. The information obtained, could be further posted to many other public and private users in the health system, as well as individual consumers [pansys.com; Vogel & Perrault 2006].

To the users of information systems are available all data required by business processes (data for: diseases and diseases conditions, materials, equipment, organization, patients), which contributes to a better quality of clinical assessment and has great value in terms of scientific research work and professional development. Information systems allow connectivity with other health professionals, as well as organization of e-learning [Kay & Santos 2008, Majkic et all. 2003, Vogel & Perrault 2006].

The advantage of the information support of the hospital information system, mostly feel the patients. Information systems allow patients: fast, quality and more relaxed health service, equitable access and bigger equality to hospital services, transparency in orders, etc. [Milosevicet all. 2011].

OBJECTIVES

The objective of this paper is to compare possibilities of level and use of knowledge of hospital information system by staff employed in hospital gynecological department of public health and private gynecological hospital staff.

MATERIALS AND METHODS

For material of work, data from the implementation of the applicative software solutions in 2 health institutions is used, which is easy to use and capable of processing large volume of information.

Prospective work method is applied with implementing an anonymous questionnaire. The research included 30 respondents and questions concerning knowledge and attitudes in practice, regarding the use of information technology in the health system. The period of research or surveying the

respondents is from 05/01/2013 to 01/06/2013. The research was done on 15 respondents (5 doctors and 10 nurses) from P. H. I. Hospital "Plodnost" - Bitola and 15 respondents (5 doctors and 10 nurses) from the service for gynecology and obstetrics at P. H. I. Clinical hospital "Dr. Trifun Panovski" - Bitola.

RESULTS

On the question: "Is the medical staff satisfied with the education so far to use information technology in their daily work?", 4 (40%) doctors have given positive answer and 6 (60%) were dissatisfied from their education. The nurses, 11 (55%) are satisfied with the education so far from the use of the information technology at the workplace.

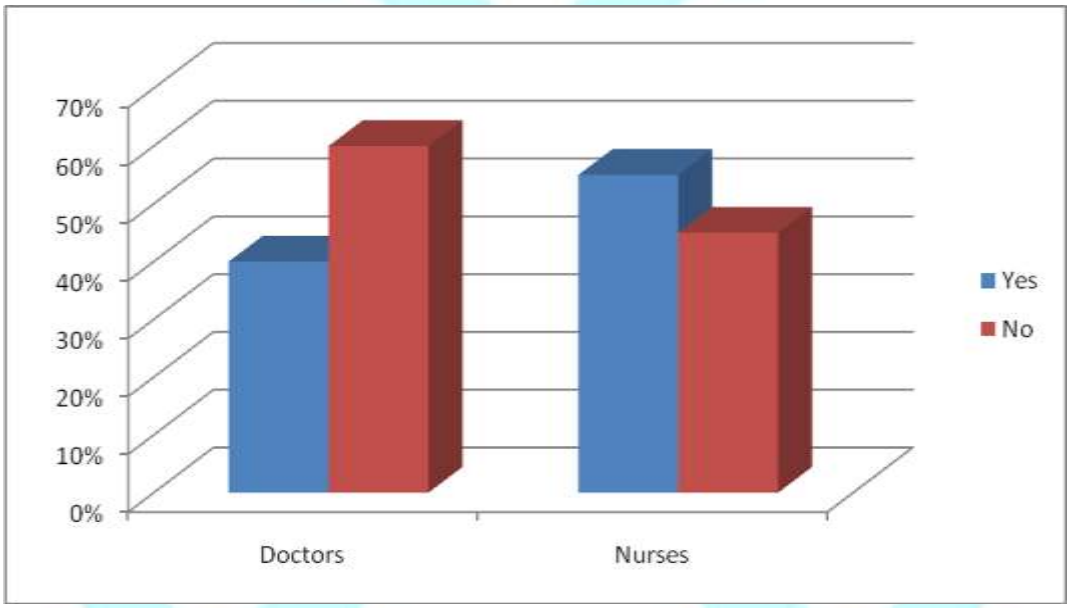

Figure 1. Education of employees to use information technology

On the question: "Is Internet use enabled at workplace?", positive response gave only 3 (30%) of the doctors, while at the nurses, the difference was smaller at those who use Internet and don't use or 9 (45%) nurses said they use and 11 (55%) don't use. It is obvious that the number of Internet users at workplace is small, among the health personnel.

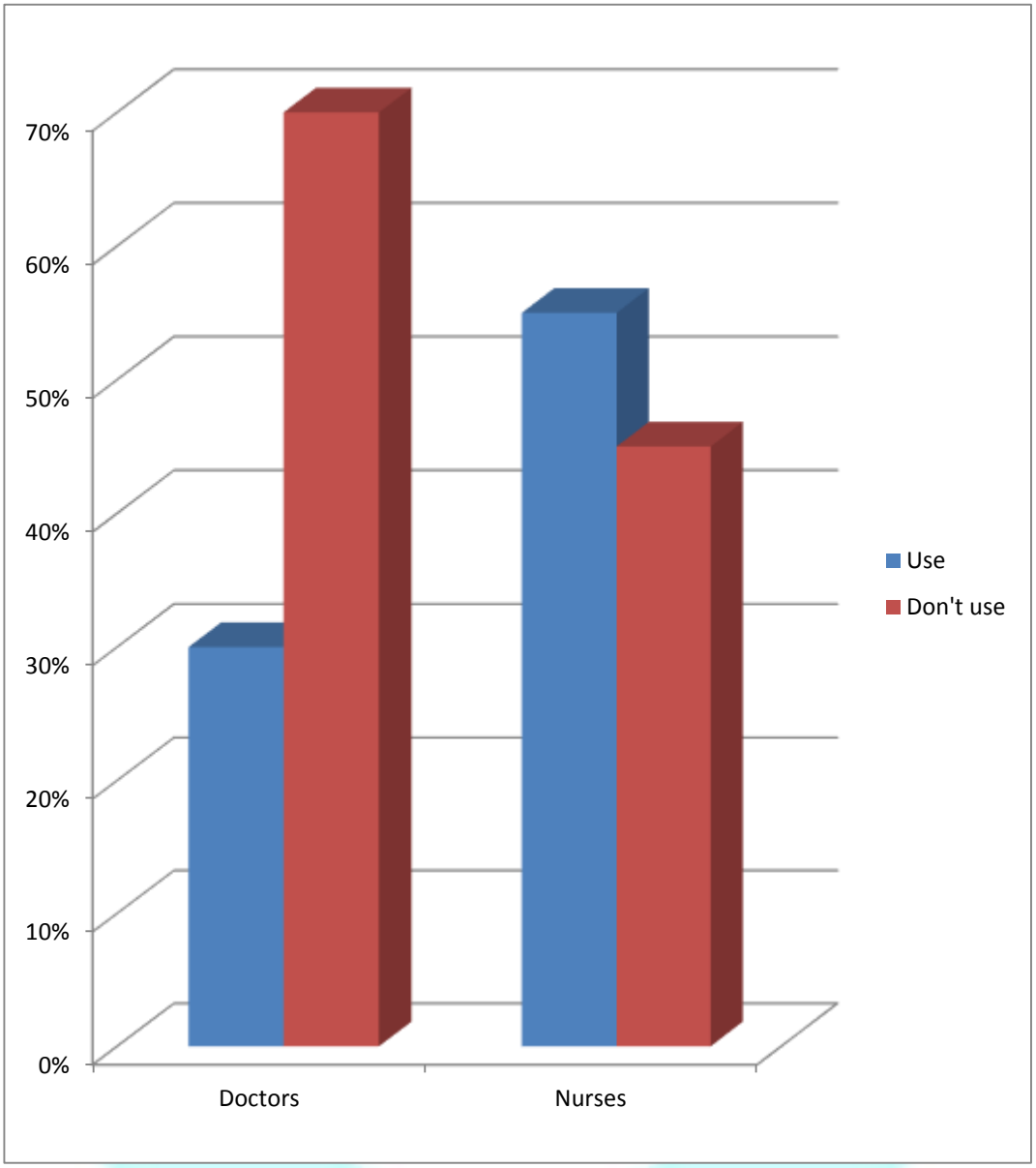

Figure 2. Internet use at workplace

The made research: "Do employees use a computer at workplace?", showed that bigger is the number of respondents who use it or the doctors said they use 6 (60%), while the nurses said they use a bigger number - 13 (65%), compared to 7 (35%), which don't use.

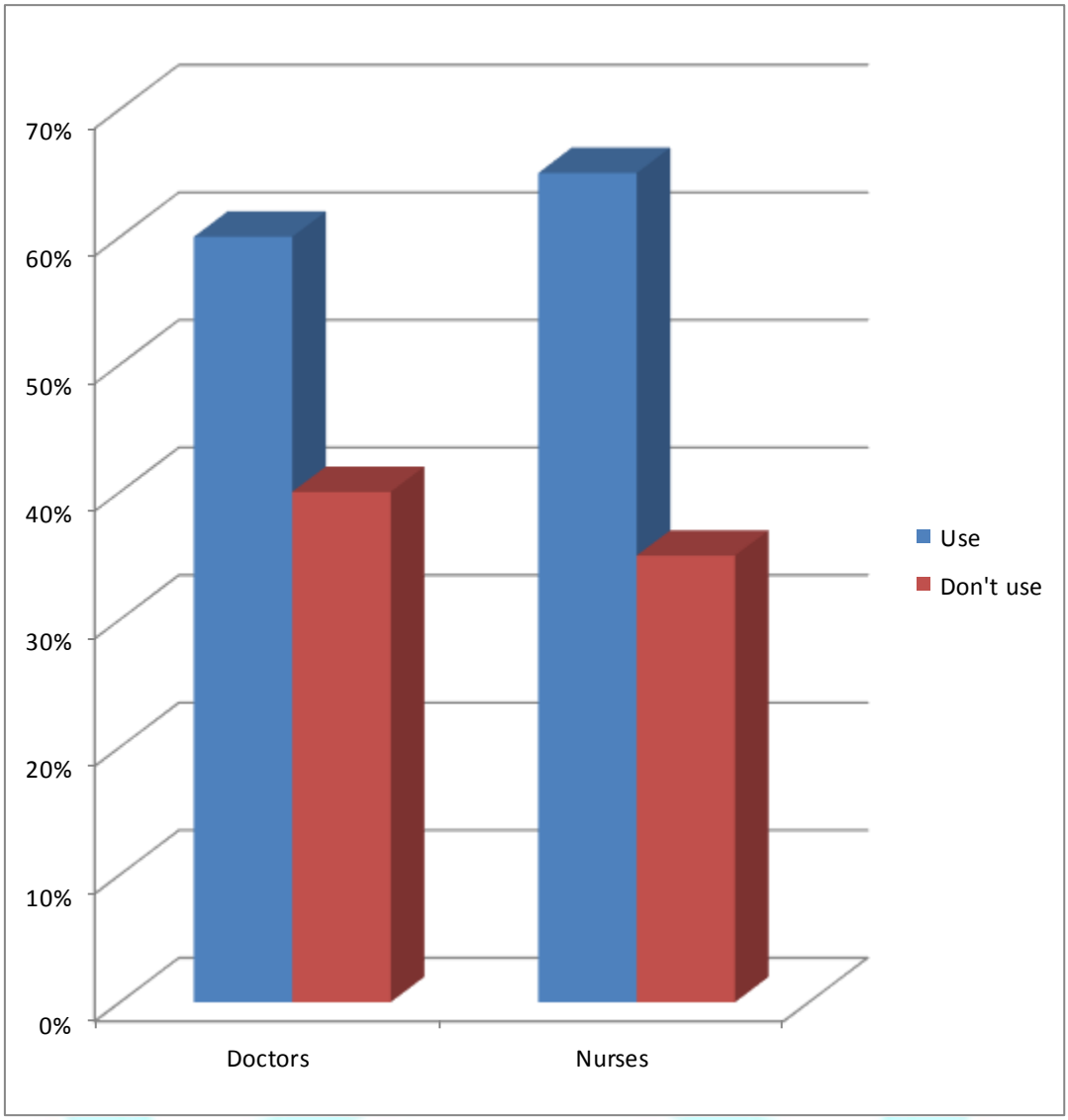

Figure 3. Computer use at workplace

The made research on the time of Internet use among doctors and nurses at workplace, showed that mostly doctors were represented - 3 (30%), who use the Internet once a week and the same %/number, were those who didn't use it at all. The research showed that nurses mostly - 9 (30%), said they use it once a week.

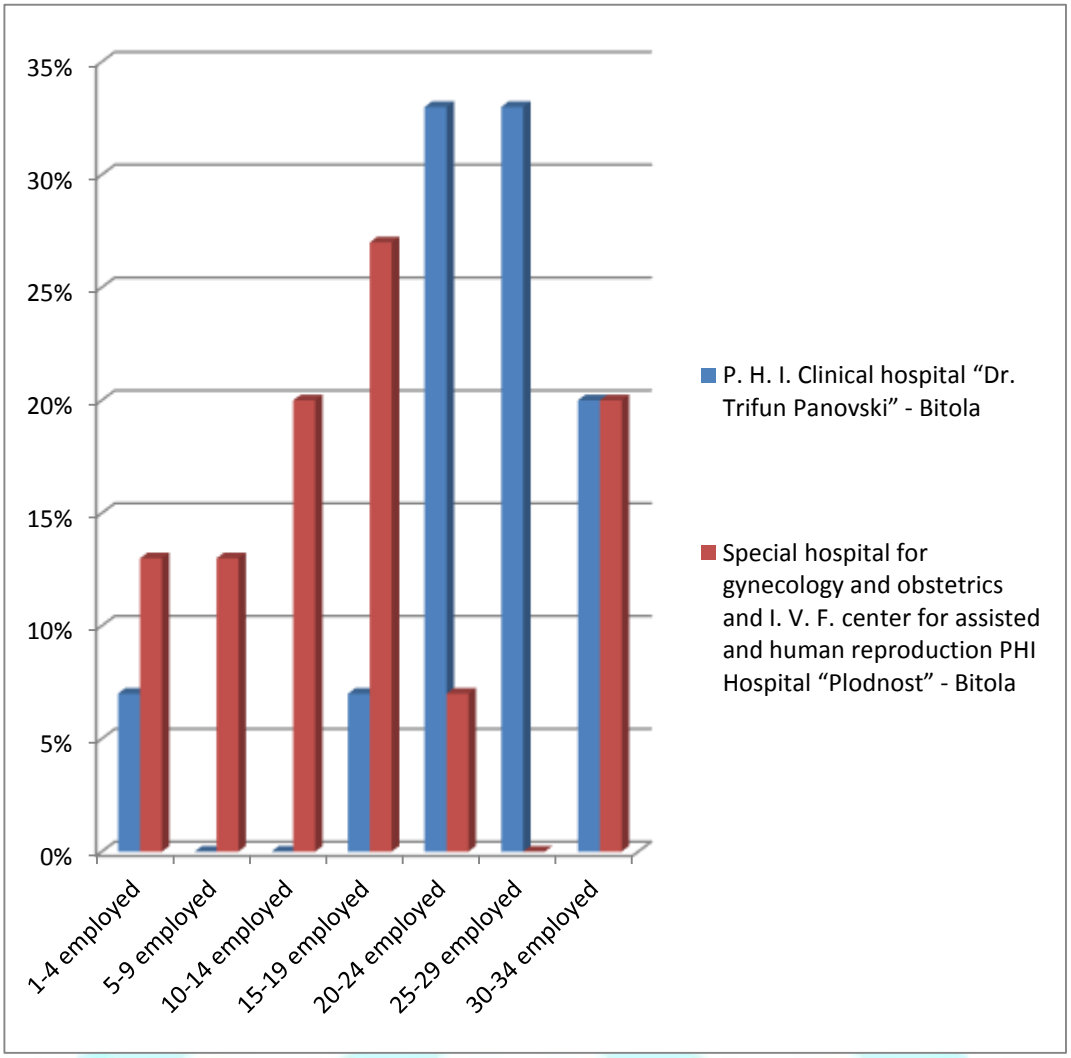

Figure 4. Frequency of Internet use in daily work

DISCUSSION

Analysis of the results from the research, showed that the information technology is not fully incorporated into the health care systems in the country or the respondents said that a large % don't use a computer at work at all and the use is limited to certain segments.

The results from the research, showed low % of Internet use among doctors and nurses. It shows that there is still underdeveloped online communication within healthcare institutions.

More and more institutions in the countries with developed information technology in the health care, encourage patients to check their health information online and in cases when they are chronically ill, the online records system helps doctors and patients to monitor key indicators, for which they inform patients by e-mail. One research shows that 74% of Americans want to go beyond caring for themselves and contact via e-mail with their doctors [Cummings 2006, Shortliffe & Cimino 2006].

From the analysis of the data: "Whether hospital staff had enough training of information technology or how they are trained to use health information systems?", in most % of the doctors, were negative responses.

But for system processing of: knowledge, information, decision-making and data in the health and medicine, healthcare personnel is required, who knows good the health and medical informatics [rwjf.com]. It can only be achieved by improving the education of the health personnel and increasing the number of well-educated people in the health and medical informatics, by which that lack of skills and knowledge can start to lose [Hinman 2002, http://www.izew.uni-tuebingen.de, Major 2003].

CONCLUSION

From the research, it can be concluded that with implementing health information systems and appropriate education of health personnel: the level of utilization of the systems is increased, modernization of the system is implemented, time is saved, etc.

With the use of the information technology (Internet, network system), the hospital staff (doctors, nurses) can fully facilitate the implementation of daily work - writing reports, faster and more efficient exchange of experiences, contracting, which can improve the health services. Both inpatient facilities have only limited use and access in their everyday work.

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