მედიცინისა და მენეჯმენტის თანამედროვე პრობლემები

საერთაშორისო, რეცენზირებადი, რეფერირებადი სამეცნიერო ჟურნალი

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ძვირფასო კოლეგებო!

შემოთავაზებული სამეცნიერო ნაშრომთა ჟურნალი განკუთვნილია მედიცინის, ეკონომიკის, მენეჯმენტის, ფიზიკური მედიცინისა და რეაბილიტაციის დარგის სპეციალისტებისათვის.

ჩვენ ვიმედოვნებთ, რომ ავტორთა მიერ წარმოდგენილი ნაშრომები ხელს შეუწყობს სამეცნიერო პოტენციალის გაძლიერებას.

მარინა ფირცხალავა
ბიოლოგიურ მეცნიერებათა დოქტორი,
პროფესორი, აკადემიკოსი,
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Dear colleagues!

The proposed scientific journal is intended for specialists in medicine, management, physical medicine and rehabilitation, economics.

We hope that the works presented by the authors will help to strengthen the scientific potential.

Marina Pirtskhalava
Doctor of Biological Sciences,
Professor, Academician,
Rector of University Geomedi

შ ი ნ ა ა რ ს ი C o n t e n t s

Antioxidant Properties of Some Caucasian Medicinal Plants

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Article History

Abstract

Since antioxidants may be implicated in disease-related processes, studying these molecules is crucial. The detection of new antioxidants may result in the application of these compounds as medications. Mountain systems and long-term climate changes have contributed to the development of the Caucasus biodiversity hotspot, characterized by a great variety of plant species. For centuries many Caucasian plants were used for the treatment of different diseases, however, the scientific knowledge of the composition of natural drugs is still far from exhaustive. The present review indicates that Caucasian medicinal plants *Symphytum caucasicum* M. Bieb., *Thymus tiflisiensis* Klokov & Des.-Shost., *Paeonia daurica* subsp. *mlokosewitschii* (Lomakin) D. Y. Hong, and *Cyclamen coum* Mill. are a valuable source of antioxidants, and extracts of these plants exhibit significant total antioxidant activity. Various classes of antioxidants were revealed in the aerial part and roots of *Symphytum caucasicum"* M. Bieb., tubers of *Cyclamen coum* Mill., petals of *Paeonia daurica* subsp. *mlokosewitschii* (Lomakin) D. Y. Hong, and the aerial part of *Thymus tiflisiensis* Klokov & Des.-Shost. These compounds included phenolic compounds, water-soluble antioxidants, alkaloids, terpenes, and saponins. *In vitro* studies demonstrated that these antioxidants are beneficial in suppressing some biological effects related to multiple diseases. The review demonstrates the benefits of using Caucasian medicinal plants for the treatment of different disorders and offers information to scientists who are working to produce safe plant-based medications.

Introduction

Since antioxidants from medicinal plants are now considered promising therapeutic candidates for preventing the damage caused by free radicals, research on these compounds has grown significantly over time [1]. The great variety of climate zones and landscapes, determined by the developed mountain systems contributed to the development of the Caucasus woodland habitats and immense biodiversity [2]. Caucasian flora includes 6350 vascular plant species, out of them more than 2900 endemic species, 1000 species are used for centuries in traditional folk medicine, and 180 species are used in modern medicine [3]. The therapeutic effect of many of these species is associated with the unique composition of antioxidants since Caucasian plants contain chemical compounds of different classes that may act individually or in synergy (reviewed in [4]).

An antioxidant is any substance that, when present in low concentrations compared to those of oxidizable substrates (such as proteins, lipids, carbohydrates, and DNA) decreases or completely prevents the oxidation of such substrate [5]. Natural antioxidants can be classified as enzymatic and non-enzymatic, primary and secondary antioxidants, hydrophilic and lipophilic antioxidants (reviewed in [6]).

This review aimed to systematize the existing knowledge about the antioxidant composition of Caucasian medicinal plants. The literature search was performed in PubMed, Scopus, and Google Scholar databases, using the following search criteria: 1. "Antioxidants"; 2. "Antioxidant System"; 3. "*Symphytum caucasicum* M. Bieb.", "*Thymus tiflisiensis* Klokov & Des.-Shost.", "*Paeonia daurica* subsp. *mlokosewitschii*" (Lomakin) D. Y. Hong", *Cyclamen coum* Mill.". The choice to focus on the discussed plants in the review likely reflects their representation of diverse plant families within Caucasian medicinal flora, scientific interest in their medicinal properties, availability of data on their antioxidant activity, and practical research constraints.

Antioxidants in Caucasian Medicinal Plants

For the representatives of four families of Caucasian medicinal plants, considered in this review the data on the content and composition of antioxidants are limited. The most commonly determined parameter was the total antioxidant activity of extracts of various plant parts.

Total antioxidant activity (TAA)

The effectiveness of antioxidants depends on their chemical structure, total concentration, and location of antioxidants in the system. Many studies aiming to determine the potential application of plants in medicine are based on the determination of TAA. Currently, many methods are used to determine the antioxidant activity (reviewed in [7]), the most common and reliable methods include ABTS, FRAP, and DPPH assays. In the ABTS assay the green–blue stable radical cationic chromophore, 2,2-azinobis-(3-ethylbenzothiazoline-6-sulfonate) ($ABTS^{·+}$) is produced by oxidation, the ferric reducing ability of plasma (FRAP) assay is based on the reducing power of the analyzed antioxidant

and 1,1-diphenyl-2-picrylhydrazine (DPPH) method is based on the scavenging effect of stable radical DPPH through the addition of an antioxidant that decolorizes the DPPH solution (the description of methods is provided in [6]).

For Caucasian plants described in this review, TAA was assessed in various studies using the DPPH method (Table 1). Thus, the above-ground part of *Symphytum caucasicum* M. Bieb. was investigated during different vegetative stages using the DPPH method. The highest TAA was revealed in methanolic extracts of *Symphytum caucasicum* M. Bieb.

and comprised from 75.48% (budding stage) to 80.81% (spring vegetation stage), ethanolic extracts – from 22.61% (blossoming stage) to 73.99% (spring vegetation stage), water extracts – from 67.46% (budding stage) to 74.45% (blossoming stage) [8]. Significant TAA was revealed for methanolic extracts of *Cyclamen coum* Mill. leaves (249.2 µg/ml) and bulbs (129.7 µg/ml) [9] and methanolic extract of the aerial part of *Thymus tiflisiensis* Klokov & Des.-Shost. [10]. TAA of *Paeonia daurica* subsp. *mlokosewitschii* (Lomakin) D. Y. Hong was lower and comprised 32.71 µg/ml [11].

Table 1 Total antioxidant activity, determined by the DPPH method of Caucasian medicinal plants

Plant part/extractant	*Symphytum caucasicum* M. Bieb.	*Thymus tiflisiensis* Klokov & Des.-Shost.	*Paeonia daurica* subsp. *mlokosewitschii* (Lomakin) D. Y. Hong	*Cyclamen coum* Mill.	References
Aerial part/methanol	80.81 %	1100 µg/ml	-	-	[8], [10]
Leaves/ethanol	27.5 %	-	24.81 µg/ml	164.8 µg/ml	[12], [11], [9]
Aerial part/ethanol	19.98 mg TE/g	-	-	-	[13]
Roots (tubers)/ethanol	9.00 mg TE/g	-	-	129.7 µg/ml	[13], [9]
Leves/methanol	-	-	32.71 µg/ml	247.2 µg/ml	[11], [9]
Roots (tubers)/methanol	-	-	-	129.7 µg/ml 8.52 mg TE/g	[9], [14]
Leves/acetone	-	-	-	257.6 µg/ml	[9]
Roots (tubers)/acetone		-	-	336.3 µg/ml	[9]

- was not determined

Ascorbic acid

This is the major antioxidant component in plants, with the detoxification of reactive oxygen species (OH° and O_2^{-}) by ascorbic acid occurring directly, by the removal of H_2O_2 through the water-water cycle or via the glutathione-ascorbate cycle [15]. Ascorbic acid (ASC) also participates in the xanthophyll cycle, which is needed to protect photosystem II (PSII) from photoinhibition, redox signaling, modulation of gene expression, preservation of the activities of enzymes containing prosthetic transition metal ions [15]. The high content of ascorbic acid comprising 51.81, mg% (DW) was revealed in leaves of *Symphytum caucasicum* M. Bieb. (Table 2), a perennial endemic plant inhabiting the edges and glades of the Caucasian forests (Ciscaucasia, Dagestan, and Eastern Transcaucasia) [16], Fig. 1.

Phenolic compounds

Phenolic compounds act as antioxidants by reacting with a variety of free radicals involving transfer of hydrogen atoms, single electrons, or the chelation of transition metals [17]. Phenolic compounds are usually classified into simple phenolics (hydroxyphenols or dihydroxybenzenes), phenolic acids, and polyphenols, which include flavonoids, tannins, and stilbenes. The anthocyanins, natural water-soluble pigments occurring in plants represent a particular variety of phenolic compounds.

The high content of phenolic compounds was demonstrated in Caucasian medicinal plants: thus, the content of soluble phenols was 3 mg/g DW in *Symphytum caucasicum* M. Bieb. leaves, and roots of this plant contained phenolic polymer poly[3-3,4-dihydroxyphenyl)-glyceric acid [18], (Scheme 1). The presence of phenolic compounds (C-dihexoside, quercetin-3-galactoside), flavonoids and tannins [14] was revealed in tubers of *Cyclamen coum* Mill. (Table 2), a tuberous herbaceous perennial with an extensive area from Southern and Southeastern Europe to the Mediterranean and South-West Asia [14]. The total content of anthocyanins in *Symphytum caucasicum* M. Bieb. leaves was 0.487 mg/g DW [12]. Petals of *Paeonia daurica* subsp. *mlokosewitschii* (Lomakin) D. Y. Hong contained anthocyanin peonidin-3,5-di-*O*-glucoside [19], (Scheme 1). *Paeonia daurica* subsp. *mlokosewitschii* (Lomakin) D. Y. Hong, is a species of flowering plant native to the temperate biome of east Georgia and adjacent areas in Russia and Azerbaijan [20], (Fig. 1).

Fig. 1 Photos of medicinal Caucasian plants *Symphytum caucasicum* M. Bieb. (A) and

Paeonia daurica subsp. *mlokosewitschii* (Lomakin) D. Y. Hong (B)

Alkaloids

Alkaloids are a large diverse group of biologically active compounds, exhibiting antioxidant effects similar to or even more active than standard antioxidants [21]. Roots of *Symphytum caucasicum* M. Bieb. contained asperumine (Scheme 1), echimidine N-oxide, echinatine and lasiocarpine (Table 2) as the major alkaloids [22]. Alkaloids were also revealed in tubers of *Cyclamen coum,* but identification of alkaloids was not performed [14].

Terpenes

Terpenes represent a large group of hydrocarbons consisting of 5-carbon isoprene (C_5H_8) units as their basic building block. Terpenes were shown to inhibit ROS production and lipid peroxidation and increase the endogenous antioxidant status [23]. Nerolidol (Scheme 1), germacrene, and farnesol were shown to be the most abundant terpenes in the essential oil extracted from the aerial part of *Thymus tiflisiensis* Klokov & Des.-Shost. (Table 2) [24], a subshrub endemic to Georgia, inhabiting lower and middle mountain belts in Kakheti, Kartli, Kiziki, Gare Kakheti and Trialeti [25]

Saponins

Saponins compose a class of plant secondary metabolites, consisting of an aglycone with carbohydrate moieties. The number and type of carbohydrate moieties determine the structural diversity of the saponins. The aglycone can be a triterpene or a steroid with different substituents (–H, –COOH, –CH₃). The antioxidant activity of saponins was demonstrated. They have been shown to

scavenge free radicals such as hydroxyl, superoxide, peroxide, and nitric oxide radicals [26]. The presence of various saponins (coumosides, cyclaminorin, deglucocyclamin, cyclacoumin (Scheme 1)) [27] was revealed in tubers of *Cyclamen coum* Mill. (Table 2).

Table 2 Antioxidants revealed in Caucasian medicinal plants

Family	Plant species	Part of plant	Class of antioxidants	Antioxidant	References
Boraginaceae	*Symphytum caucasicum* M. Bieb.	Aerial part, roots	Phenolic compounds	Poly[3-(3,4-dihydroxyphenyl)glyceric acid]	[18]
		Leaves	Water-soluble antioxidants Phenolic compounds	Ascorbic acid Anthocyanins	[12]
		Roots	Alkaloids	Asperumine, echimidine N-oxide, echinatine and lasiocarpine	[22]
Lamiaceae	*Thymus tiflisiensis* Klokov & Des.-Shost.	Aerial part	Terpenes	Nerolidol, germacrene, farnesol, amphene, sabinene, endo-borneol, nerol, citral, bornyl acetate, terpinyl acetate, muurolene, bisabolene, E-bisabolene, caryophyllene oxide, and epi-cubenol	[24]
Paeoniaceae	*Paeonia daurica* subsp. *mlokosewitschii* (Lomakin) D. Y. Hong	Petals	Phenolic compounds	Anthocyanins peonidin-3,5-di-*O*-glucoside	[19]
Primulaceae	*Cyclamen coum*	Tubers	Saponins	Coumoside A, coumoside B, cyclaminorin, deglucocyclamin, cyclacoumin, mirabilin lactone	[27], [14]
			Phenolic compounds	Flavonoids Tannins Phloretin C-dihexoside, quercetin 3-galactoside, catechin,	
			Alkaloids		

The medicinal prospects of antioxidants from Caucasian medicinal plants
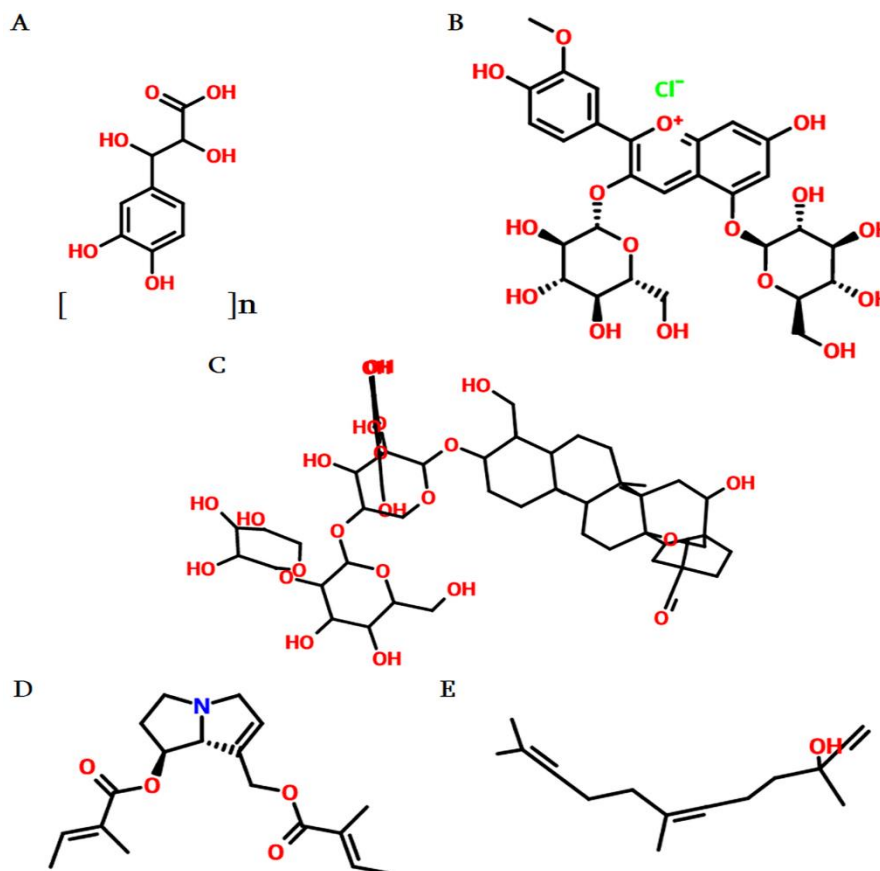
Scheme 1 Chemical representation of some representative compounds mentioned in Table 2. Poly[3-(3,4-ihydroxyphenyl)glyceric acid] (A); peonidin-3,5-di-O-glucoside (B); cyclacoumin (C); asperumine (D); nerolidol (E).

The involvement of oxidative stress in the pathogenesis of insulin resistance, cancer, diabetes mellitus, cardiovascular diseases, and aging was demonstrated and WHO identified medicinal plants as one of the possible sources of new pharmaceuticals [28]. Antioxidants of medicinal plants can be used for both the prevention and repair of cellular damage. The effect of antioxidants is due to the prohibition of the formation of ROS and their scavenging and due to the restoration of the activities of enzymes involved in cellular development. The use of antioxidants, extracted from Caucasian medicinal plants for the treatment of various diseases was demonstrated. Thus, the bioactive poly[3-3,4-dihydroxyphenyl)glyceric acid] isolated from aerial parts and roots of *Symphytum caucasicum* M. Bieb. exhibited significant antioxidant activity, affecting ROS formation by polymorphonuclear neutrophils [18]. Essential oils from aerial parts of *Thymus tiflisiensis* Klokov & Des.-Shost. exhibited moderate cytotoxic activity against human colon cancer cell lines [24]. The most abundant phenolic compound quercetin-3-galactoside in tuber extracts of *Cyclamen coum* Mill. was attributed to the anti-tyrosinase activities

exhibited by the extracts of this plant [14]. Saponin extracts of *Cyclamen coum* Mill. inhibited growth of *Pseudomonas aeruginosa, Staphylococcus aureus, Salmonella typhi, Klebsiella pneumonia,* and *Enterococcus faecalis* [29].

Conclusions

The present review indicates that Caucasian medicinal plants are a valuable source of hydrophilic and hydrophobic antioxidants that confer high ROS-scavenging ability. The analysis of the literature also demonstrated that extracts of *Symphytum caucasicum* M. Bieb., *Thymus tiflisiensis* Klokov & Des.-Shost., *Paeonia daurica* subsp. *mlokosewitschii* (Lomakin) D. Y. Hong, and *Cyclamen coum* Mill. possess significant total antioxidant activity. The highest total antioxidant activity was revealed for the aerial part of *Thymus tiflisiensis* Klokov & Des.-Shost. Various phenolic compounds were detected in the aerial part and roots of *Symphytum caucasicum* M. Bieb., tubers of *Cyclamen coum* Mill. and petals of *Paeonia daurica* subsp.

mlokosewitschii (Lomakin) D. Y. Hong. Aerial part of *Thymus tiflisiensis* Klokov & Des.-Shost. Also contained various terpenes. *In vitro* studies demonstrated that these compounds are beneficial in suppressing some biological effects related to multiple diseases. The identified antioxidant compounds from Caucasian medicinal plants, discussed in this review, hold great promise for developing novel therapeutic agents and represent valuable reservoirs for drug discovery efforts. The decision to concentrate on the above three plants in the review likely indicates their representation of various plant families within Caucasian medicinal flora, scientific curiosity regarding their medicinal attributes, the accessibility of data concerning their antioxidant properties, and practical limitations in research. However, in the future, the review should be extended to encompass other plants within the Caucasian medicinal flora to provide a more comprehensive understanding of antioxidant properties across a broader spectrum of species.

კავკასიაში გავრცელებული ზოგიერთი სამკურნალო მცენარის ანტიოქსიდანტური თვისებები

ჯოვანი ნ. როვიელო[1], ვალენტინა მიტოვა[2,3*] iD, ზურაბ რ. ცეცხლაძე[2,3] iD, როზა ბიბინაშვილი[4], მარინა ჭორდანია[5], მალხაზ ვახანია[2,3], თორნიკე მინდიაშვილი[2,3], მარიამ კობიაშვილი[2,3]

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აბსტრაქტი

ვინაიდან ანტიოქსიდანტური თვისების მქონე ნაერთებს შეუძლიათ გავლენა მოახდინონ ადამიანის სხვადასხვა დაავადებების მიმდინარეობაზე, აქედან გამომდინარე, ამ ტიპის მოლეკულების შესწავლას დიდი მნიშვნელობა ენიჭება. ახალი ანტიოქსიდანტური თვისების მქონე ნაერთების აღმოჩენა იძლევა იმის იმედს, რომ ისინი მომავალში სამკურნალო პრეპარატების სახით იქნება გამოყენებული.

კავკასიის უნიკალურმა მთათა სისტემამ და კლიმატურმა თავისებურებამ ჩამოაყალიბა მცენარეთა სახეობათა სიმრავლით გამორჩეული სამყარო. საუკუნეების მანძილზე კავკასიის ტერიტორიაზე არსებული მცენარეები გამოიყენებოდა და გამოიყენება სხვადასხვა დაავადებების სამკურნალოდ. თუმცა, თანამედროვე კვლევის მეთოდებით, მათ შემადგენლობაში არსებული ბიოლოგიურად აქტიური ნაერთების მოქმედებების მექანიზმების გარკვევა, ჯერ კიდევ არის არის კარგად შესწავლილი.

მოცემულ მიმოხილვაში ნაჩვენებია კავკასიის სამკურნალო მცენარეების: *Symphytum caucasicum* M. Bieb. (ლაშქარა); *Thymus tiflisiensis* Klokov & Des.-Shost. (თბილისური ბეგქონდარა), *Paeonia daurica subsp. mlokosewitschii (Lomakin) D. Y. Hong* (მლოკოშევიჩის ირდასალამი) და *Cyclamen coum* Mill. (კავკასიური ყოჩივარდა) ექსტრაქტების ანტიოქსიდანტური თვისებები, რაც იმაზე მიუთითებს, რომ ისინი მეტად მნიშვნელოვანი წყაროა ამ ტიპის ნაერთების მისაღებად. მცენარეების – *Symphytum caucasicum* M. Bieb-ის (ლაშქარა) მიწისზედა ორგანოებიდან და ფესვებიდან; *Cyclamen coum* Mill-ის (კავკასიური ყოჩივარდა) გორგლებიდან; *Paeonia daurica subsp*-ის *mlokosewitschii* (Lomakin) D. Y. Hong-ის (მლოკოშევიჩის ირდასალამი) ფოთლებიდან და *Thymus tiflisiensis* Klokov & Des.-Shost-ის (თბილისური ბეგქონდარა) მიწისზედა ორგანოებიდან, გამოყოფილია სხვადასხვა ანტიოქსიდანტური თვისების მქონე ნაერთები, მაგალითად; ფენოლური მოლეკულები, წყალში ხსნადი ანტიოქსიდანტები, ალკალოიდები, ტერპენები და საპონინები.

In vitro კვლევებმა აჩვენა, რომ აღნიშნული ანტიოქსიდანტური თვისების მოლეკულები ირგუნავენ სხვადასხვა დაავადებებთან დაკავშირებულ ბიოლოგიურ ეფექტებს. მიმოხილვაში წარმოდგენილია კავკასიის ტერიტორიაზე გავრცელებული სამკურნალო მცენარეების გამოყენება სხვადასხვა დაავადებებთან მიმართებაში. ასევე წარმოდგენილია მასალები იმ მკვლევარებისათვის, რომლებიც იკვლევენ და ქმნიან მცენარეების საფუძველზე დამზადებულ უსაფრთხო სამკურნალო საშუალებებს.

საკვანძო სიტყვები: ლაშქარა (Symphytum caucasicum M. Bieb), თბილისის ბეგქონდარა (Thymus tiflisiensis Klokov & Des.-Shost.), მლოკოშევიჩის ირდასალამი, (Paeonia daurica subsp. mlokosewitschii (Lomakin) D. Y. Hong), კავკასიური ყოჩივარდა, (Cyclamen coum Mill.,) ანტიოქსიდანტური აქტიურობა, DPPH-ანალიზი, სამედიცინო მიზნებისათვის გამოყენება.

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The Quality Work Life among Nurses Working in Selected Hospitals in Kathmandu

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Abstract

Background: Quality Work Life (QWL) is essential for the long-term resilience of healthcare systems and nurses' Well-Being (WB), despite the fact that there hasn't been much research done in Nepal.

Purpose: The main aim of this research study is to examine the QWL among nurses and inspect the association b/t QWL with demographic features among nurses.

Methods: To study nurses' QWL, a cross-sectional technique was carried out at the selected tertiary-level of Hospital in Basundhara/Dhapasi, Kathmandu; a non-probability enumerative sampling method was adopted based on the QWL survey. The questionnaire has six categories: sociodemographic data, work environment, management relationships, work conditions, job perception, and support services. Validity and reliability were ensured, and informed consent was obtained in writing. The study had 150 registered nurses enrolled in it, and it received ethical approval.

Findings: In this study, researchers utilized descriptive and chi-square tests to examine the level of quality of work life (QWL) among nurses and the association of demographic factors with QWL, However, the results demonstrated that the majority (81.3%) of the nurses experienced a moderate level of QWL.

Research Limitation/ Practical Implication: Low generalizability, a small sample size, self-reported bias, a cross-sectional design, and limited data collection techniques are some of the study's limitations. Health organizations should invest in training and development, social support, flexible work, and policies that address the work environment, relationships with management, work conditions, job perception, and support services if they want to improve the QWL of nurses in Kathmandu. It is crucial to take activities that increase output and employee happiness.

Originality/Value: The originality and value of this study reside in its assessment of the relationship between QWL, quality patient outcome, and nurse well-being, addressing a significant gap in the literature.

Keywords: Hospital, Nurses, Quality Work Life (QWL).

Background

Quality work life (QWL) is defined "as the extent to which an employee is satisfied with personal and working needs through participating in the workplace while achieving the goals of the organization [1]. The QWL of nurses can be significantly impacted by a diversity of foremost components, containing the work situation, relations with management, work circumstances, job awareness, and support services. Numerous research studies have studied the influence of these issues on QWL [2, 3, 4, 5, &6]. For instance, a study by Mori et al. (2014) discovered that 60% of the nursing workforce started undergoing a modest level of QWL [5]. Similar findings were found in a study by Kelbiso et al. (2017), which also found that educational status, median household income, working units, and work environment were significant predictors of QWL and that 67.2% of nurses were unsatisfied with their QWL [4]. In addition, Kaddourah conducted a study in which a total of 365 nurses were chosen as a sample, and displayed that participants were disappointed with their work (54.7%) and that concluded 94% of them intended to leave their current hospital [3]. However, due to their sound effects and behavior on patient service, nursing workforces' turnover and QWL are challenging for the healthcare industry [2, 3]. Likewise; a study by Nayeri et al. that recruited 360 clinical nurses revealed that 61.4% of the participants' QWL was at a moderate level [6]. Similarly, an investigation by Al-Maskari et al in 2020, a total of 345 nurses took participants in the study, and the results showed that overall, the nurses displayed a moderate degree of QWL and that nurses' QWL has an indirect impact on the standard of patient care [2]. In addition, in a study by Javanmardnejad et al.,(2021) investigated the connection between happiness, QWL, and job satisfaction among nurses, 270 nurses in total were interviewed and findings, nurses did not report feeling joyful, and their happiness may have been correlated with their socioeconomic standing [7]. Moreover, a study by Thapa et al. (2022) in Nepal had 151 employees in total and the findings showed that unhealthy working conditions, such as toxic work environments, had an adverse effect on employees' engagement and wellbeing [8]. In addition, a study by researchers concluded that empathy is an essential skill in the nurse-patient relationship; however, the findings revealed that the empathic level had a below-average score [9]. There is a concern; nonetheless nurse's performance is a significant measure in the healthcare organization [7]. However, there are few studies conducted in Nepal. Overall, it is essential to understand how the different elements such as workplace environment, relations with management, working circumstances, job perception, and support services affect QWL with the purpose of encouraging their WB and enhancing quality health service in healthcare settings. Hence researchers decided to conduct this study. Moreover, the QWL of a nurse's workforce can be meaningfully influenced by other reasons such as work environment, relationship with managers, work conditions, job perception, and social support. These are highlighted below with various studies.

Work Environments

Quality work Life (QWL) is important in healthcare services, especially for the nursing workforce for playing an important role in providing all-inclusive service at work [4]. QWL for nurses comprises WB, professional development, social support, and team-impacting patient care excellence, staff turnover, and job satisfaction. Nurses' well-being is crucial for safe, high-quality patient care. Numerous evidence revealed that the QWL of the nursing workforce employed in hospital settings is closely connected to their work environments [4, 10]. The work environment comprises features such as the physical work settings [4] organizational culture, and collaborative working relationships [11].When nurses work encouraging work environments, they are more likely to experience higher levels of job satisfaction, commitment, and overall QWL [11]. One of the basics that pay to a progressive "work environment" for nurses is requiring sufficient staffing [12]; and researchers analyzed survey data from 95,499 nurses and discovered that when nurses are not satisfied with their jobs, it can result in expensive labor disputes, employee turnover, and patient risk [12]. They also experience higher levels of stress, burnout, and job dissatisfaction, which negatively impacts their quality of work life QWL [13]. Furthermore, it's crucial to have a friendly and cooperative working relationship with others [14] Nurses; quality of life(QoL) and work life balance are essential for quality patient care, a study conducted by Kowitlawkul et.al, (2019),the study found that

social support and stress coping ability to be key determinants for nurses; high QoL. Cultivating social support can enhance nurses QoL [14]. At hospitals, by resolving these issues; nurses can improve their work environment and quality of life, which will improve patient outcomes. Overall, the respondents agreed that creating a positive workplace atmosphere is necessary to increase nurses' QWL and the caliber of care they can provide to patients. Hospitals may generate a welcoming environment by taking care of things like staffing levels, connections between team members, and chances for professional advancement [15].

Relationship with Managers

Successful relationships between nurses and their managers can increase job satisfaction, lower stress levels, and improve patient outcomes [1, 11 & 16]. A study conducted by Vermeer et al. (2018), suggested that the relationship between employees and supervisors can help municipal healthcare workers perform well at work and have a sense of belonging [17]. However, another study highlighted that the respondents were dissatisfied with their work lives due to various factors such as inadequate vacation time for nurses and their families, management and supervision practices, an absence of skilled increase opportunities, and recreation facilities [1]. Positive relationships between nurses and their managers are associated with increased job satisfaction, decreased burnout, and improved patient outcome [8, 9, & 10]. According to a study, nurse managers and staff relationships that are positive are linked to

greater levels of job satisfaction [14, 15], loyalty to the organization, and patient safety [8]. Likewise, another study suggested that; the nurses mentioned essential elements that they believe would improve patients' experiences of the quality of nursing care: clinically competent nurses, collaborative working relationships, autonomous nursing practice, managerial support, feedback, and transparent goals [8, 11 & 14]. Therefore, a positive relationship between nurses and their managers can lead to many benefits such as better communication, collaboration, trust, wellbeing, and opportunity to grow.

Work Conditions

Nurses, as the main group of healthcare workforces, ought to enjoy a suitable QWL to be able to offer quality care to their patients; consequently, nurses' professions should be taken into account [5]. Nurses working in hospitals face hard and challenging work conditions [5, 8, & 18]. Issues such as working hours, WLB, salary, and employment levels can impact job fulfillment, burnout, and turnover intent among nurses. Concerning working hours and shift duty, a study showed by Venkataraman et al. (2018) established that nurses' working hours, working in OPDs, and no night shift were important factors paying to greater nursing QWL scores (P>0.05) [18], concern about staff deficiencies and workload were key issues for over 40% of staff who stated their intent to leave their current post [19]. According to a study, nurses who worked longer shifts experienced higher rates of job dissatisfaction, burnout, and intention to quit as well as impairments to their health [18, 19].

Similarly, this study also establishes that nurses who stated higher points of supervisor care and flexible work provisions were less likely to experience work-family conflict [14, 15]. The main influencing issues were unsuitable working hours, lack of facilities for nurses, failure to balance work with domestic needs, no provision of pause areas, and inadequate salary [1].Also, a study showed with 650 nursing staff in 15 nursing homes discovered that multivariate linear regression modeling revealed that rises in work-family conflict were linked with lower mental health scores (B=-2.56, p>.01) [20]. Though, earnings are also an additional factor that gives notice of growth work satisfaction. A study initiated that earnings was a significant interpreter of job satisfaction among nurses. A study showed in 125 health facilities, where 424 nurses were chosen at random to do in-person interviews across the entire country of Ethiopia, mentioned that reasonable salary and marginal benefits are also desirable to reduce their disappointment with the job [21].Nevertheless, sufficient nursing staff is also additional factor that can decline job stress [15]. According to a study, nurses who work in hospitals with inadequate staffing levels experience greater levels of occupational stress and burnout [15, 21]. This study also found that acceptable staffing levels were linked with higher levels of job satisfaction and organizational promise among nurses [8, 13, &14]. Overall, work conditions play an important role in the job fulfillment, burnout, and turnover intent of nurses working in selected hospitals [1, 8, & 21].

Job Perception

The significant impact it can have on patient results has made the QWL lives a key concern in modern years. In this study, researchers observe how nurses working at particular hospitals see their works in relationships of teamwork, autonomy, and EE. "Employee engagement (EE) has been documented as a significant predictor of QWL among employees [8]. A high level of EE has been associated with developed job fulfillment, b/t WB, and lower turnover [2]. In addition to the other factors mentioned, "autonomy" has also been linked to QWL in healthcare workers [22, 23].Study has revealed that healthcare workers who have additional regulator over their work setting and decisions have a tendency to experience less exhaustion and higher job satisfaction [23]. Likewise, teamwork has been established to be vital in enhancing QWL for nurses [24]. Effective teamwork can decrease stress and growth job satisfaction, subsequently in improved patient outcomes [23]. Overall, the literature review emphasized the standing of job perception features in enacting QWL among nurses [24]. Hospital managers need to reflect these features and impatient strategies and approaches that encourage EE, autonomy, and teamwork [24, 25]. Undertaking will not only improve QWL for nurses but also lead to shared patient results [21,22,&26]. It is vital that the health care institute prioritizes the WB of its nursing staff to make certain that they can deliver the best promising care to patients.

Support Services (SS)

Quality work life is a vital characteristic of the nursing career, referring to the contentment, EE, WB that nurse's understanding in their work setting [10,27,28].Supportive service, such as internal work support and sufficient material and tools for patient care, show a critical role in creating a progressive work atmosphere for nurses[15,24,&29]. This literature assessment aims to discover the association between SS and QWL among nurses in a selected hospital in Kathmandu, Nepal. Several studies have observed the influence of SS on QWL among nurses in diverse [9, 30, & 31]. For example, in Nepal among 124 nurses in a teaching hospital, appropriate payment of wage and satisfactory types of apparatus and materials were initiated to be significant for nurse retention and JS [30]. Likewise, additional study found those nurses' understandings with facilities and barriers in their work-related wellbeing were definitely affected by support from coworkers and supervisors, as well as the accessibility of equipment [15, 32, 33, & 34]. Generally, the literature proposes that SS, such as sufficient tools for patient care, are vital for creating an encouraging work setting for nurses and improving their QWL. Cultivating this SS can lead to developed nurse fulfillment and retention, eventually cultivating patient care results.

Objectives' of the study are;

1. To identify the level of work environment, relationship with managers, work conditions, job perception, and support service

2. To identify the level of quality of work life (QWL) among nurses.

3. To determine the relationship b/t distinct socio-demographic factors and QWL.

Design / Methodology / Approach

The current study utilized an analytical cross-sectional design to explore the QWL among nurses in a selected hospital in Kathmandu. The study areas included two hospitals, namely, Greencity Hospital and BP Smriti Hospital, both of which are located in Basundhara, Kathmandu. The study populations consisted of registered nurses (RNs) who were currently working in the selected hospitals and were willing to participate in the study. A non-probability enumerative sampling technique was employed, and a total of 150 respondents were included in the study, with 96 from Greencity Hospital and 54 from BP Smriti Hospital. The inclusion criteria included all levels of RNs, while nurses on long leave during the data collection period were excluded. Data were collected through self-administered questionnaires developed based on the Quality of Nursing Work Life Survey (QNWL) and feedback from experts and members of the research committee. The QNWL tool was developed by Beth A. Brooks in the USA in 2001 and included 42 items categorized into five categories [35]. The questionnaire was

Socio-demographic information

divided into six sections: sociodemographic data, work environment, relationships with managers, work conditions, job perception, and support services. The research instruments' validity and reliability were ensured through consistent guidance from the research committee, a review of the literature, and pre-testing among 10% of the total sample size in similar areas. The data collection procedure involved obtaining informed, written consent from each respondent, clearly stating the study's purpose, maintaining confidentiality, and collecting data within a two-week period. Ethical clearance and permission letters were obtained from the hospital administration, and informed consent was obtained from all the respondents who participated in the study.

Findings

This study aims to examine the QWL among nurses working in selected hospitals in Kathmandu. The collected information was checked for entirety and accurateness, then coded, tabulated, and examined using SPSS. Descriptive analysis was used to observe mean, percentage, and frequency, while inferential statistics (chi-square) were used to explore the association between QWL and DF. The data will be stored safely and accurately.

Table 1. Illustrates the respondents' socio-demographics

Variables	Frequency	Percentage
Age of respondents		
18-25 years	100	66.7
26-35 years	49	32.7
36-45 years	1	0.7
Ethnicity		
Brahmin/Chhetri	101	67.3
Janajati	45	30
Dalit	4	2.7
Religion, Hinduism	125	83.3
Buddhism	21	14
Christianity	4	2.7
Marital status		
Unmarried	111	74
Married	39	26
Educational status		
PCL	112	74.7
PBNS	21	14
BSC	17	11.3
Designation		
Staff Nurse	149	99.3
Ward In charge	1	0.7
Monthly income		
15,000 and below	31	20.7
16,000-30,000	106	70.7
31,000-45,000	9	6
46,000 and above	4	2.7

Table 1 shows the socio-demographic information of the respondents. Nearly two-thirds of the respondents (66.7%) were between 18-25 years. Majority of the respondents (67.3%) were of Brahmin/Chhetri ethnic background. The respondents following Hindu religion were 83.3%. Unmarried respondents (74%) were higher than married respondents (26%). Majority of the

respondents (74.7%) had an educational qualification of PCL level. The designation of almost all of the respondents (99.3%) was staff nurse. Majority of the respondents (70.7%) had a monthly income of 16,000-30,000.

Objectives 1 (one): To identify the level of work environment, relationship with managers, work conditions, job perception, and support service.

Table 2. Illustrate the level of work environment, relationship with manage

Statements	Strongly agree f (%)	Agree f (%)	Neutral f (%)	Disagree f (%)	Strongly disagree f (%)
Work environment					
Positive opinions about nursing profession	22(14.7%)	26(17.3%)	67(44.7%)	22(14.7%)	13(8.7%)
Professional opportunities.	4(2.7%)	52(34.7%)	63(42%)	20(13.3%)	11(7.3%)
Talking Profession teammates	8(5.3%)	58(38.7%)	60(40%)	19(12.7%)	5(3.3%)
Nursing policies and procedures	20(13.3%)	59(39.3%)	43(28.7%)	26(17.3%)	2(1.3%)
Safe working environment	31(20.7%)	51(34%)	57(38%)	5(3.3%)	6(4%)
Feel safe & protected against damage (Physical, Moral verbal)	18(12%)	44(29.3%)	41(27.3%)	38(25.3%)	9(6%)
Believe job is safe	17(11.3%)	31(20.7%)	52(34.7%)	18(12%)	32(21.3%)
Managers respect nursing profession	16(10.7%)	50(33.3%)	55(36.7%)	14(9.3%)	15(10%)
Relations with managers					
Good rapport with the manager or supervisor nurse.	22(14.7%)	62(41.3%)	53(35.3%)	10(6.7%)	3(2%)
Manager/supervisor provides adequate supervision/inspection	18(12%)	61(40.7%)	54(36%)	13(8.7%)	4(2.7%)
Feedback on performance is provided by the manager or supervisor.	23(15.3%)	67(44.7%)	48(32%)	10(6.7%)	2(1.3%)
Managers and supervisors seek feedback.	11(7.3%)	52(34.7%)	57(38%)	21(14%)	9(6%)
Managers and supervisors recognize accomplishments.	17(11.3%)	47(31.3%)	62(41.3%)	18(12%)	6(4%)

Table 2 demonstrates the work environment related information of the respondents. It was measured with 8 statements. For a statement; people has positive outlook about nursing profession, nearly half of the respondents (44.7%) showed a neutral response. Nearly half of the respondents (42%) were neutral regarding the statement that institutions give

professional opportunities. Regarding the statement; I communicated with other team members like physiotherapist and respiration therapist, more than one-third of the respondents (40%) showed a neutral response. As for the statement; nursing policies and procedures facilitate my job, more than one-third of the respondents (39.3%) agreed. More

Table 2 shows the **relationship** of the respondents with their managers. For a statement; have good communication with manager/supervisor nurse, more than one-third of the respondents (41.3%) showed neutral response. As for a statement; manager/supervisor provides adequate supervision/inspection, 40.7% were agreeing with the statement. Nearly half of the

than one-third of the respondents (38%) were neutral towards safety and provided a safe environment. Regarding another statement; I believe my job is safe, more than one-third of the respondents (34.7%) were neutral. For a statement; managers respect nursing, more than one-third of the respondents (36.7%) were neutral.

respondents (44.7%) agreed with a statement that manager/supervisor provides feedback about performance. More than one-third of the respondents (38%) were neutral towards manager/supervisor asks their opinions. Regarding the statement; my achievements are recognized by the manager/supervisor, 41.3% of the respondents were neutral.

Objectives (One); to identify the level, the work condition, the job perception, and the support service.

Table 3. Illustrate the level of work condition, job perception, and support service

Statements	Strongly agree f (%)	Agree f (%)	Neutral f (%)	Disagree f (%)	Strongly disagree f (%)
Work Condition					
Overworked	20(13.3%)	38(25.3%)	32(21.3%)	38(25.3%)	22(14.7%)
Balance work and family life	10(6.7%)	58(38.7%)	43(28.7%)	23(15.3%)	16(10.7%)
Irrelevant nursing work	7(4.7%)	51(34%)	31(20.7%)	39(26%)	22(14.7%)
Energy outside of work	7(4.7%)	28(18.7%)	60(40%)	40(26.7%)	15(10%)
Frequently disrupted	8(5.3%)	36(24%)	46(30.7%)	54(36%)	6(4%)
Have enough time for work	14(9.3%)	34(22.7%)	42(28%)	33(22%)	27(18%)
Adequate number of nurses.	9(6%)	32(21.3%)	29(19.3%)	50(33.3%)	30(20%)
Shifts work negatively affects.	16(10.7%)	16(10.7%)	46(30.7%)	40(26.7%)	32(21.3%)
Adequate salaries	14(9.3%)	10(6.7%)	21(14%)	24(16%)	81(54%)
Policy family wellbeing	12(8%)	11(7.3%)	41(27.3%)	42(28%)	44(29.3%)
Job Perception					
Work engagement.	7(4.7%)	47(31.3%)	58(38.7%)	27(18%)	11(7.3%)
Autonomy in deciding patient care.	8(5.3%)	56(37.3%)	61(40.7%)	17(11.3%)	8(5.3%)

Team work	20(13.3%)	59(39.3%)	40(26.7%)	13(8.7%)	18(12%)
Attached to work.	23(15.3%)	60(40%)	41(27.3%)	20(13.3%)	6(4%)
Appreciation work	24(16%)	65(43.3%)	44(29.3%)	11(7.3%)	6(4%)
Communication with Doctors and others	34(22.7%)	54(36%)	44(29.3%)	18(12%)	-
Quality of care	38(25.3%)	58(38.7%)	41(27.3%)	8(5.3%)	5(3.3%)
Support Service					
Support from non-medical team	30(20%)	51(34%)	54(36%)	9(6%)	6(4%)
Resource at work	21(14%)	44(29.3%)	58(38.7%)	24(16%)	3(2%)
Give good quality patient care.	54(36%)	55(36.7%)	40(26.7%)	1(0.7%)	-
Qualified supporting system	26(17.3%)	39(26%)	59(39.3%)	22(14.7%)	4(2.7%)

Table 3 illustrates the **work condition** related information of the respondents. One-fourth of the respondents (25.3%) agree that they had work overload. For a statement; "balance work and family life", more than one-third of the respondents (38.7%) agree. More than one-third of the respondents (34%) agreed that they need to do a lot of irrelevant work. Regarding a statement; "energy outside of work", 40% of the respondents said neutral. For a statement; "frequently disrupted from outside", 36% of the respondents disagree. Regarding a statement; "have enough time for work", 28% of the respondents showed a neutral response. For another statement; "adequate nurse available", the responses were disagree (33.3%). As for shifts work negatively affects my life, the majority of responses were neutral (30.7%). Table No. 3 shows the **job perception** related information of the respondents. The responses for a statement; "work engagement" (38.7%). Regarding a statement; "autonomy in deciding patient care", the responses was neutral (40.7%). More than one-third of the respondents (39.3%) agree towards teamwork is present in unit. Most of the respondents (40%) felt attached to work. Regarding a statement; "communicate with doctors and others", the responses were agree (36%). For a statement; "quality care" for patients and their family life, one-third of the respondents (38.7%) were agreed.

Table No. 3 shows the **support services** related information of the respondents. For a statement; "support from non-medical team", like [meal, cleaning and care staff] (meal, cleaning, and care staff), the responses were neutral (36%). For another statement; "resources for patient care", the responses were neutral (38.7%). As for a statement; "quality patient care", the responses were agreed (36.7%). Regarding a statement; "qualified support system", more than one-third of the respondents (39.3%) showed a neutral response.

Objective 2 (Two): To identify the level of quality of work life (QWL) among nurses.

Table 4. Shows the nurses' Quality of Work Life (QWL) levels.

Level of QWL among nurses	Frequency	Percentage
High	22	14.7
Moderate	122	81.3
Low	6	4

Table No. 4 presents the levels of quality of nursing work life, which were measured using 34 positive statements with a scoring range of 0-5. To determine the total score range (which was from 0 to 170), all of the scores were added up. Based on the total score, the level of quality of nursing work life was categorized as follows: low (0-79 score), moderate (80-125 score), and high (126-170 score).The outcome demonstrated that the majority of the nurses (81.3%) had experienced a moderate level of QWL, followed by high (14.7%) and low (4%) levels.

Objective 3: To identify the relationship between QWL and socio-demographic variables.

Table 5. Association b/t socio- demographic factors (DF) and level of QWL

Variables		Level of QNWL		df	Chi-square	p-value
		Low	High			
Age	18-25 years	88(58.7%)	12(8%)	1	1.705	0.192
	26-45 years	40(26.7%)	10(6.7%)			
Ethnic background	Brahmin/Chhetri	87(58%)	14(9.3%)	1	0.160	0.689
	Others	41(27.3%)	8(5.3%)			
Religion	Hinduism	107(71.3%)	18(12%)	1	0.043	0.836
	Others	20(13.3%)	5(3.4%)			
Marital status	Unmarried	33(22%)	6(4%)	1	0.022	0.883
	Married	95(63.3%)	16(10.7%)			

Table 5 shows the relationship between the dependent and independent variables. The chi-square test was used to determine the association between the level of QNWL and age, ethnic background, religion, and marital status. None of the study factors were found to be associated with the level of QNWL, as the observed p-value was higher than the standard p-value of 0.05

Discussion

The goal of the current study was to evaluate QWL and associated demographic variables in selected hospitals in Kathmandu. Hospitals must place a high priority on finding, keeping, and training qualified nurses. Improved

organizational performance, staff morale, and nursing care quality are all benefits of a good QWL program [1, 5, 24, 26, &33]. The sociodemographic details of the participants are shown in Table (1). The vast majority of responders were young individuals (18 to 25 years old), of Brahmin or Chhetri ancestry, and of practicing Hinduism. The number of unmarried respondents was higher. The majority of participants had obtained a PCL-level education and were employed as staff nurses, earning between $16,000 and $30,000 per month.

The current study discovered that many nurses reacted indifferently to claims concerning how society views nurses, career options, and team communication. These results are in line with those of an earlier study conducted in South Ethiopia [4], the study discovered that nurses who reported unpleasant work surroundings were more likely to have a poor quality of work life than those who did not [4].However, the prior study found those nurses' opinions of their workplace was typically unfavorable, underscoring the need for change. Overall, both studies indicate that improving the working environment and addressing problems like communication and career prospects can help nurses enjoy their jobs more. Furthermore, according to a study by Almalki et al. (2012), the respondent's dissatisfaction with their work life was caused by an unsatisfactory work environment [1]. The results of the present study and earlier studies thus imply that healthcare organizations should concentrate on enhancing nurses' **working conditions**,

including inter-team communication among team members, offering chances for professional growth, and enhancing support services. These enhancements are necessary to guarantee employee happiness, lower turnover rates, and enhance patients.

In order to compare the findings to other studies, the goal of this study was to determine the degree of relationship between nurses and their managers. Table No. 2 presents the responses of the respondent to different statements related to their relationship with their managers. The results indicate that over one-third of the respondents (41.3%) had a neutral attitude toward the statement that the state has good communication with managers. However, the previous study by Venkataraman et al. (2018) found that the respondent had very supportive management practices and a favorable relationship with supervisors, which are key factors for the quality of work life [18]. In a study conducted by Almalki et al. (2012), the major influencing factors were lack of professional development and poor supervision practices [1]. Finally, the study examines the level of relationship between nurses and their managers and compares the findings to previous research. The results indicate that communication and recognition are the areas where improvements are needed to enhance the relationship between nurses and their managers. Feedback is an area where managers have performed well, indicating that they should continue to provide regular feedback to their staff. The findings of this study are consistent with previous studies and emphasize the

importance of effective communication, feedback, and recognition in promoting a positive relationship between nurses and their managers.

The findings presented in Table 3 provide insight into the **work conditions** experienced by the respondents. Specifically, the data suggests that a significant proportion of the participants experience work overload (25.3%) and feel that they need to do a lot of irrelevant work (34%). This finding is consistent with previous research that has identified workload as a significant contributor to stress and burnout among nurses [36]. Interestingly, more than one-third of the respondents (387%) reported that they can manage a good balance between work and family. This finding is consistent with research that has identified work-family balance as a critical factor in reducing burnout and improving job satisfaction among employees [15, 30, 31 & 37]. Regarding the impact of shift work on nurse's lives, the majority of responses were neutral (30.7%). The findings are consistent with previous research that has shown mixed results regarding the impact of shift work nurses; health and wellbeing [16, 18 & 20]. Overall, the findings presented in Table No. 3 highlight the importance of addressing workload, work-family balance, stress levels, and disruptions to daily life in an effort to reduce stress and burnout among nurses. Further research is needed to better understand the impact of these factors on nurse's health and wellbeing and to identify effective interventions to address them.

The current study explored **job perception-related information** among the respondents. The results indicated that a significant proportion of the practitioners had positive responses towards feeling connected with their work and having autonomy in deciding patient care. However, a considered number of participants agree that teamwork is present in their unity, and they feel attached to their work. Moreover, a noteworthy characteristic of participants is that they can communicate effectively with doctors at their workplace, and their job is effective for patients and their family lives. These findings are consistent with previous studies that have investigated job perception among healthcare professionals [38]. However, further research is needed to explore the factors that influence healthcare professional's job perception in depth.

The current study investigated information about support services among respondents. The results indicated that a significant proportion of the participants had neutral responses towards receiving adequate support from support services staff and having adequate materials and equipment for patient care. However, a considerable number of participants believe that they can provide quality patient care. Moreover, noteworthy percentages of participants showed a neutral attitude towards receiving qualified support studies that have instigated support services among health care professionals [14]. However, further research is needed to identify the factors that affect healthcare professional satisfaction with support services.

The results of the study determined the nurses' level of QWL; the majority of participants in the study (81.3%) reported having a moderate level of QWL, according to the study's findings. Similar findings were found in a prior study by Moradi et al. (2014), which found that 60% of the nursing workforce had an average level of quality work life [5]. This indicates that although there were some positive aspects of work-life, there were also areas that required improvement to enhance the well-being and job satisfaction of nurses. Similar findings were found in a study published by Kelbiso et al. (2017), which found that 67.2% of nurses were not happy with the caliber of their work. However, due to their effects on patient care, the QWL and also problematic challenges for healthcare organizations [4].However, the quality of nurse work life and nurse turnover are challenging issues for healthcare organizations because of their consequences and impacts on patient care [3]. The findings highlight the need for organizations to provide flexible scheduling options and support programs for nurses to help them achieve a better work-life balance. Specifically, organizations should prioritize creating a positive and supportive workplace culture that fosters social support and positive interactions among colleagues and provide flexible scheduling options and support programs to help nurses achieve a work-life balance. By addressing these areas, organizations can support their nursing workforce and promote a volunteer quality of work life.

The current study aimed to recognize the association between QWL and selected DF among nurses. The findings showed that none of the DF studies, counting age and marital status, experiences, education, were significantly associated with the level of QWL among nurses. These results are consistent with earlier research accompanied by Suleiman et al. (2019); Pudashini et al. (2023),[37,38] where DF such as age, marital status, experiences, education, and work-related variables were found to be insignificant in defining the QWL of nurses[1,15,26,&39,]. These outcomes propose that QWL is a multidimensional paradigm that is influenced by several factors beyond DF. Additional study is needed to discover other DF that may affect QWL among nurses, such as work atmosphere, experiences, education, and socioeconomic status. Thoughtful DF can help administrations create targeted mediation to expand the QWL of nurses and encourage a strong work atmosphere.

Limitation

A study on the "Quality of Work Life among Nurses Working at Selected Hospitals in Kathmandu" has significant limitations, which are listed below.

Low Generalizability: There may be restrictions on how well the study's findings can be applied to other hospitals in various regions of Nepal or in other nations.

Sample Size: The study's sample size could be limited, which could reduce the statistical power of the findings. Limited

representativeness and probable bias in the results could emerge from this.

Self-report Bias: The study may use self-reported measurements, which could be influenced by response bias or social desirability bias.

Cross-sectional Design: This study might make use of a cross-sectional design, which might enable it to pinpoint the causes of the variables. It could be necessary to utilize an experimental or longitudinal design to prove a cause-and-effect connection.

Data collection method: The study may only utilize one data gathering technique, such as a survey, which could restrict the volume and quality of the information gathered. Further information about the experiences of nurses in their professional lives may be obtained through other techniques, such as interviews or observation.

Practical implication / suggestions

The current study found no significant association between demographic factors and QWL among nurses but revealed moderate QWL levels. Practical implications for intervention to improve nurse QWL.Yet, a variety of investigations have demonstrated that demographic factors including age, education level, work experience, marital status, and other factors are crucial factors at work, and multiple studies have shown a connection between these factors and the quality of the work-life [2,5,8,21]. So, organizations must spend packages on training and development programs to enhance nurses' skills. To completely investigate the emotional connection between QWL and DF among nurses at a teaching hospital, additional research is also required.

Similarly, the current study found a moderate level of work environment, relationship with managers, work conditions, job perception, and support services. However, they are all important in the organization, hence the recommendation to develop policies and programs that address the identified factors that influence QWL among nurses. Similarly, a study suggested that social support from supervisors, bosses, co-workers, family members, and friends was a significant factor that influenced QWL [20, 30, and 38]. A current study suggested that nurse managers foster a culture of collaboration and support among nurses by promoting open communication and teamwork; however, a study suggests that nurse managers should integrate WeChat-three good things (3GT) intervention with well-known sociological communication methods to help nurses cope with clinical problems and keep the nursing team stable [41].According to the results of the current study, there are worries about relationships with managers, working conditions, and social services. As a result, the research recommends offering nurses the necessary resources and support to help them deal with their work-related stress and avoid burnout, such as employee assistance programs, coaching services, worry management workshops, and so on. Likewise, a study recommended formulating plans to advance and maintain nurses' health and shields them from occupational illnesses

[8,11,31].Adopt flexible work arrangements, such as hybrids, which Survey and Gallup found to be the most effective (2022), researchers in this study, recommended adopting a flexible working strategy to boost passion, engagement, and enthusiasm as well as performance (24,26,& 28).In the current study, researchers suggested that to ensure a favorable outcome for nurses and the healthcare institution they work for, consideration should be given to variables such as working hours, work-life balance, remuneration, and staffing levels. However, various studies have also suggested that the development of initiatives [2] considers the appropriate policies to promote the QWL and productivity [6].Organize support (OS), employee well-being (EWB) [8] team work, team building strategies [22] good communication [17] relationship at work [8]emotional intelligence (EI), [25] improving nurse; working condition [15] like this factors such as (relationship, working condition, communication) are fundamental components for the development of techniques to avert burnout and boost job satisfaction[8]

Conclusion

According to the results of the study on the QWL among nurses employed by a few Kathmandu hospitals, it can be said that the overall QWL of nurses in these hospitals is moderate; however, there is no DF associated with QWL. The research study showed that nurses experience a variety of difficulties that have an impact on their QWL, including working circumstances, interactions with managers, attitudes toward their jobs, and involvement in social services. The research study made clear that hospitals must take initiative to raise the QWL of their nursing staff. This can be accomplished by offering ample resources, including support, training, professional growth, a supportive work environment, and a work environment that promotes teamwork among employees and management. In order to reduce anxieties and stress, hospitals can also put in place programs and packages that assist and maintain work-life balance and the welfare of nurses. Thus, enhancing nurses' QWL can result in better patient care and outcomes as well as higher participant retention rates, both of which are essential for the long-term viability of care delivery.

Abbreviations:

EE=Employee Engagement
WLB=Work Life Balance
B/t=Between
Job Satisfaction=JS

კატმანდუს შერჩეული საავადმყოფოების ექთნების ხარისხიანი შრომითი საქმიანობა

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აბსტრაქტი

საფუძველი: ხარისხიანი სამუშაო საქმიანობა აუცილებელია ჯანდაცვის სისტემებისა და ექთნების კეთილდღეობის გრძელვადიანი მდგრადობისთვის, რაზეც სათანადო რაოდენობის კვლევები ჯერ არ ჩატარებულა ნეპალში.

მიზანი: ექთნებს შორის ხარისხიანი სამუშაო საქმიანობის გარემო პირობების შესწავლა და დემოგრაფიულ მახასიათებლებთან მათი კავშირის შემოწმება.

მეთოდები: ექთნების ხარისხიანი სამუშაო საქმიანობის შესასწავლად განხორციელდა ჯვარედინი სექტორული მონიტორინგი, ჰოსპიტალის შერჩეულ მესამეულ დონეზე ბასუნდჰარა/დაპასში, კატმანდუ; ხარისხიანი სამუშაო მოღვაწეობის კვლევის საფუძველზე, გამოყენებულ იქნა რიცხობრივი შერჩევის მეთოდი. ექვსი კატეგორიის კითხვარით: სოციოდემოგრაფიული მონაცემები, სამუშაო გარემო, მენეჯმენტის ურთიერთობები, სამუშაო პირობები, სამუშაოს აღქმა და დამხმარე სერვისები. უზრუნველყოფილ იქნა მონაცემთა საჭირო რაოდენობა და სანდოობა და მიღებულ იქნა წერილობითი თანხმობა მათ გამოყენებაზე. კვლევაში ჩართულ იქნა 150 რეგისტრირებული ექთანი, ეთიკური ნორმების დაცვით.

დასკვნები: მკვლევარებმა გამოიყენეს აღწერილობითი და ე.წ. კვადრატული ტესტები ექთანთა შორის სამუშაო საქმიანობის ხარისხის დონის შესასწავლად და დემოგრაფიულ ფაქტორებთან კავშირის დასადგენად და შედეგებმა აჩვენა, რომ ექთანთა უმრავლესობა (81.3%) შეიგრძნობდა შრომითი საქმიანობის ხარისხის ზომიერ დონეს. კვლევის გარკვეული შეზღუდულობის გამოვლინებები: დაბალი განზოგადება, მცირერიცხოვანი დაკვირვება, თვითგამოცხადებული მიკერძოება, მონაცემთა შეგროვების შეზღუდული დიზაინი და ტექნიკა. ჯანდაცვის ორგანიზაციებმა უნდა განახორციელონ ინვესტიცია ტრენინგსა და განვითარებაში, სოციალურ მხარდაჭერაში, მოქნილ მუშაობში და პოლიტიკაში, რომელიც შეეხება ზოგად გარემოს, მენეჯმენტთან ურთიერთობას, სამუშაო პირობებს, სამუშაოს აღქმასა და დამხმარე სერვისებს, თუ სურთ გააუმჯობესონ კატმანდუში ექთნების შრომითი მოღვაწეობის ხარისხი. გადამწყვეტი მნიშვნელობა აქვს

ისეთი აქტივობების განხორციელებას, რომლებიც გაზრდის გამომუშავებას და თანამშრომლების ბედნიერებას.

ორიგინალობა/ღირებულება: ამ კვლევის ორიგინალობა და ღირებულება გამოიხატება შრომითი საქმიანობის ხარისხს, პაციენტის შედეგსა და მედდის კეთილდღეობას შორის კავშირის შეფასებაში, რაც მნიშვნელოვან უკმარობას ავსებს არსებულ ლიტერატურაში.

საკვანძო სიტყვები: სავადმყოფო, ექთანი, ხარისხიანი სამუშაო ცხოვრება.

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Patients' satisfaction as the main indicator of evaluation of the activity of Medical Organizations

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Article History

Abstract

In terms of economic activities, employment, development of new technologies, health care is one of the most important sectors both in the world and in Georgia. In order to achieve success in the medical services market, constant attention to the quality of medical services is essential, which makes the medical institution a market leader and a sought-after institution. In order to ensure, manage and improve the quality of healthcare services, it is necessary to continuously involve management, medical staff, patients and their relatives in the improvement of medical services, which should be part of the marketing strategy. Quality medical service is important for the patient; Their perception of the quality of medical services is subjective; Therefore, it is advisable to continuously focus on patient satisfaction research. In advanced countries, much attention is paid to the evaluation of the activities of medical organizations. This is due to the constantly changing innovative technologies of providing medical services and their cost increase. Complications of technology lead to increased risks for patients; It should be noted that, on the one hand, there is experience in the evaluation and accreditation of healthcare organizations (JCI), and on the other hand, developed countries use certain indicators to evaluate medical institutions. In addition, the World Health Organization (WHO) has developed a list of recommended indicators and an evaluation method for evaluating and comparing hospital performance.

The article discusses quality assurance of healthcare services, foreign experience, indicators for evaluating the activities of medical organizations, online survey of patients' satisfaction with inpatient services in Georgian clinics.

Keywords: Healthcare marketing, Quality of Medical Services, Questionnaire Survey, Patient Satisfaction.

Introduction

For any medical institutions, it is necessary to constantly take care of the quality of medical services, because good quality services make the medical institution a leader of the medical market and a sought-after institution. Quality medical services are important for society and patients; If the quality meets the patient's expectations and meets his needs, he is committed to the given institution. Different processes are considered as areas of medical service quality, the most important of which are: efficiency (the patient should get the desired result with effective service), interpersonal and public relations (between the medical staff and the patient/the patient's relatives/the patient's legal representative and the relations between the medical institutions; Also, between clinics and patients, etc.); Continuity (the patient receiving the full range of services he needs without interruption). Also, comfort (waiting room, building wards, food, etc.) is important.

In order to achieve the quality assurance, management and improvement of health services, it is necessary to continuously involve management, medical staff, patients and their relatives in medical services. In the case of perfection, which should be part of the marketing strategy. Actually, the activity of medical institutions is evaluated by the achieved quality and level of medical services.

Materials and methods

Performance evaluation of medical organizations is a powerful management tool with materials, methods and the sources we use [1-15]:

1. By objectively comparing the quality and safety indicators of medical services, it is possible to identify the best and worst medical organizations. Therefore, management focus on studying bad and best practices;

2. Ratings compiled on the basis of subjective and objective indicators help patients to make a decision about choosing a hospital and also help medical organizations to motivate their activities in terms of improving results;

3. Performance evaluation indicators of medical organizations allow healthcare leaders to assess how rationally public resources are spent.

In developed countries, much attention is paid to the evaluation of the activities of medical organizations, especially inpatient facilities. This is due to the constantly changing innovative technologies of providing medical services and their cost increase. Complications of technology lead to increased risks for patients; As a result, on the one hand, the requirements for the safety of medical services and, on the other hand, their control are increasing. The increase in the cost of technologies leads to the need for effective control of their use, meeting these requirements is significantly related to the development of evaluation indicators by health care systems, which have been introduced not so long ago in economically strong and well-developed health care countries. In Canada, the Netherlands and Denmark, about 50 indicators are used at the national level to evaluate the performance of hospitals, in Germany - about 100 The World Health Organization (WHO) has also developed a list of recommended indicators

and an evaluation method - PATH - Performance Assessment Tool for Quality Improvement in Hospitals to evaluate and compare hospital performance. The world-recognized system of assessment and accreditation of healthcare organizations, which is implemented through accreditation by JCI - an independent, non-profit organization known as one of the leading international leaders in patient safety and healthcare quality in general. By combining experience, tools and documented knowledge, JCI helps organizations deliver the highest quality care and focus on continuous improvement. This is a voluntary accreditation of inpatient facilities, which allows them to receive expert assistance and provide the market with the highest standards of medical services. Accreditation standards are based on the following criteria:

- diagnosis of the patient;
- Setting and developing goals in treatment;
- Developing a plan with the involvement of the parties involved in the treatment process
- (doctors, patients, family members, etc.);
- evaluation of treatment results;
- Complete production of medical documentation;
- Compliance with quality standards, which ensures solving problems related to patient treatment and continuous improvement of medical services.

According to the latest data, the Joint Commission Hospital Accreditation Program is more than 60 years old, and the number of accredited hospitals exceeds 4,000. The advantages of accredited hospitals are:

- Production of international level medical and some other related services;
- Guarantee of safe service and sustainable health of patients;
- Data protection and promotion of effective information exchange;
- Improving the quality of service.

The complete quality management of medical institutions depends on priority categories: orientation to patients' needs;

- Proper provision of the working environment of the employees;
- maximum safety protection;
- Information systems and means of communication;
- Managerial mechanisms.

For all successful healthcare facilities, patient focus and employee orientation are paramount. Patients and the public in general, who apply to an accredited institution, are sure that they will receive a high-quality level of service; Accordingly, the institution is constantly trying to improve the quality of services.

Our population still does not have access to a full set of modern medical services. It is true that, as a result of the new changes, certain conditions are created for improving the quality of health care services and facilitating access to them, but problems still exist. For the successful functioning of the hospital, an important role is assigned to the strengthening of such competencies as:

1. All this is possible by introducing Improving clinical quality and gaining trust in relations with patients;

2. Evaluation of clinical effectiveness (efficiency);

3. Organization and management of timely and accurate information for efficiency improvement and vital forecasts;

4. Implementation of evidence-based medical services, etc.

The process of accreditation of hospitals.

In order to obtain a permit for a treatment-prophylactic institution, the requirement to fulfill the so-called patients' JCI Safety Objectives:

1. Accurate identification of patients.

2. Effective communication improvement - a specific process/procedure on how to record/receive important results of face-to-face visits, phone inquiries or analysis.

3. Reducing the dangers of high-risk drugs.

4. Operative intervention on individual parts of the body, minimizing cases of surgical procedures performed with errors.

5. Reducing the risk of healthcare-associated infections - including compliance with hygiene standards by employees.

6. Reducing the risk of injury received by the patient falling.

For the first time in Georgia, the JCI international accreditation was awarded to the medical center "MediClubGeorgia" by the United Commission, which required many years of preparatory work. Based on the assessment of the full range of activities of "MediClubGeorgia", the audit group named the mentioned medical center among the best 600 hospitals of similar accreditation in the world. As is known, "American Hospital Tbilisi" was organized with the support of the US International Development Finance Corporation. In order to provide medical services of international standards, the state transferred the state-owned real estate to the hospital by direct sale. The direct investment made by the hospital in Georgia exceeded 50 million US dollars. 183-bed facility located on 25 thousand square meters with international standard services. The hospital implements the latest management concept, which provides high-quality patient-oriented medical services. Accordingly, the hospital has a well-deserved ambition to receive the full range of Joint Commission International (JCI) accreditation. The most important objective of the institution is the successful operation of centers of excellence, which are led by highly qualified professionals. "American Hospital Tbilisi" cooperates with Georgian, Turkish and US university clinics.

In the US, in recent years, up to 10 different systems have been tested to evaluate the performance of hospitals. For example, Best Hospitals Honor Roll, America's Best Hospitals, 100 Top Hospitals and The Joint Commission Quality Check, and then a unified national system for evaluating the performance of medical organizations was developed. In 2015, a rating based on subjective indicators (patient survey) was published for the first time in the USA, and in 2016, a comprehensive rating was published, which includes subjective and objective indicators. Currently, all US hospitals are required to report these indicators at some frequency (quarterly, annually). The results of the ratings are used to determine the volume of financing of medical organizations from state insurance funds. In the USA, there are 2 payment systems based on indicators of quality indicators and performance evaluation

of medical organizations. The Merit-based Incentive Payment System (MIPS). Introduced for individual private practitioners and joint medical practices. The Hospital Value-Based Purchasing (VBP) program was introduced for hospitals. These systems take into account both the achievement of the target values of the indicators, as well as the dynamics of their change. Clinics that have obtained the required total points receive additional funding, and clinics that do not have enough points, on the contrary, receive a deduction from the service fee. In the United States of America, a special questionnaire (Hospital customers Assessment of Healthcare Providers and Systems - HCAHPS) was developed to assess the quality of healthcare services by patients in medical institutions, which was officially approved by the National Quality Forum in May 2005. Randomly selected patients who were newly discharged from the hospital participated in the survey. The questionnaire is divided into categories:

1. Relationship between nurse and patient
2. Doctor-patient relationship
3. Response of hospital staff
4. Pain management.
5. Awareness about medicines
6. Discharge Awareness / Post Discharge Awareness
7. General assessment of the state of health.
8. Cleanliness in the hospital.
9. Comfortable conditions of inpatient stay.
10. General assessment of the hospital.
11. Making recommendations about the hospital

Discussion of obtained results

It should be noted that in 2019 Koblianidze and Ch. Kardava conducted an online survey of former patients of inpatient facilities; The research showed that the majority of the interviewed respondents were applying to the medical institution for the first time, and the largest part of them got to the clinic through financial assistance. Also, awareness and desirability rate of medical institutions were not high; The majority of the respondents were satisfied with the attitude of the doctor and the professionalism of the doctor. The nurse-patient attitude was also positively evaluated by the majority, And the competence and skills of nurses are evaluated positively by relatively fewer patients. The price/quality ratio turned out to be relatively less acceptable for patients; If there was a choice, some of the respondents would apply to another institution.

This time, using the American method, we conducted an online survey of former patients of inpatients. The survey was conducted with the help of the Facebook platform in the month of September 2023 and was based on the principle of random sampling. The study covered 580 persons. More than 70% of the 503 respondents were female patients. 68.6% of them are under the age of 30 (which is explained by the good digital skills of the younger generation), 12.5% are 51-60 years old, 8.3% are 31-40 years old, 10.6% are over 60.

67% of respondents had high school education, and 33% had general school education. Not a single answer was recorded with professional education and/or incomplete higher education. The medical

services received by the respondents regarding the period of medical assistance provided were sorted as follows: the vast majority (41.7%) received post-hospital services year ago, 33.3% - 9 months ago, 12.5% - 6 months ago, 6.2% - 3 month ago and 6.3% month ago.

When asked how often the nurses treated them politely and respectfully while in the medical facility, the answers of the respondents are as follows:
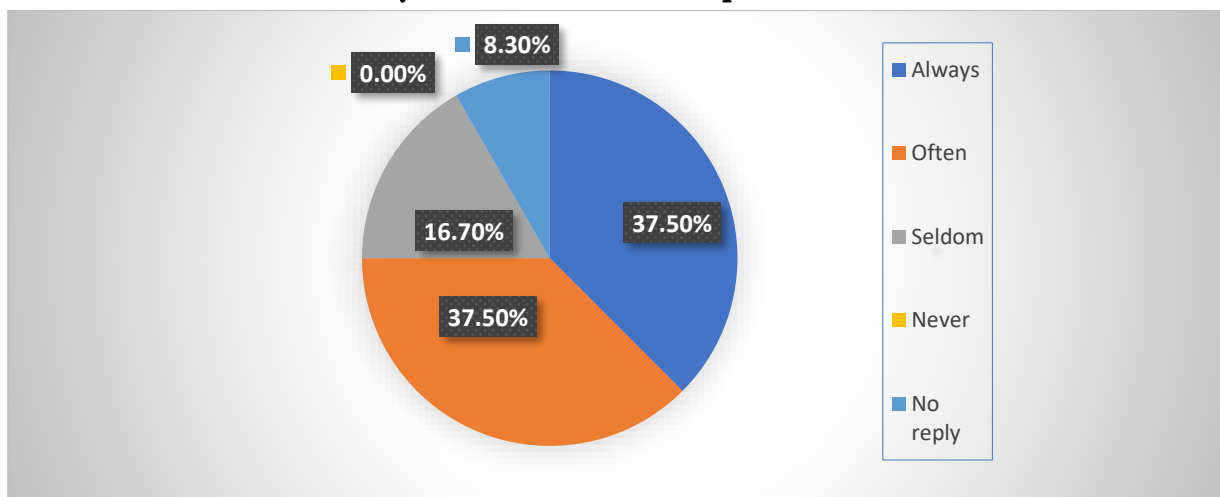
Regarding listening attentively and being treated well by doctors while in a medical facility, the responses were distributed as follows:
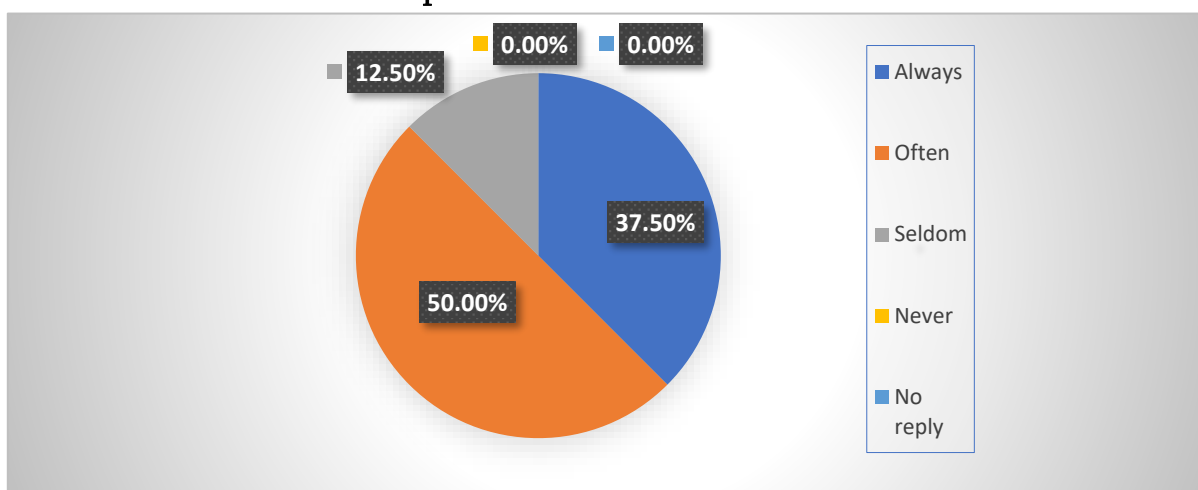
While in the hospital, after pressing the button for help, patients' perception of the expected help time gives the following picture:
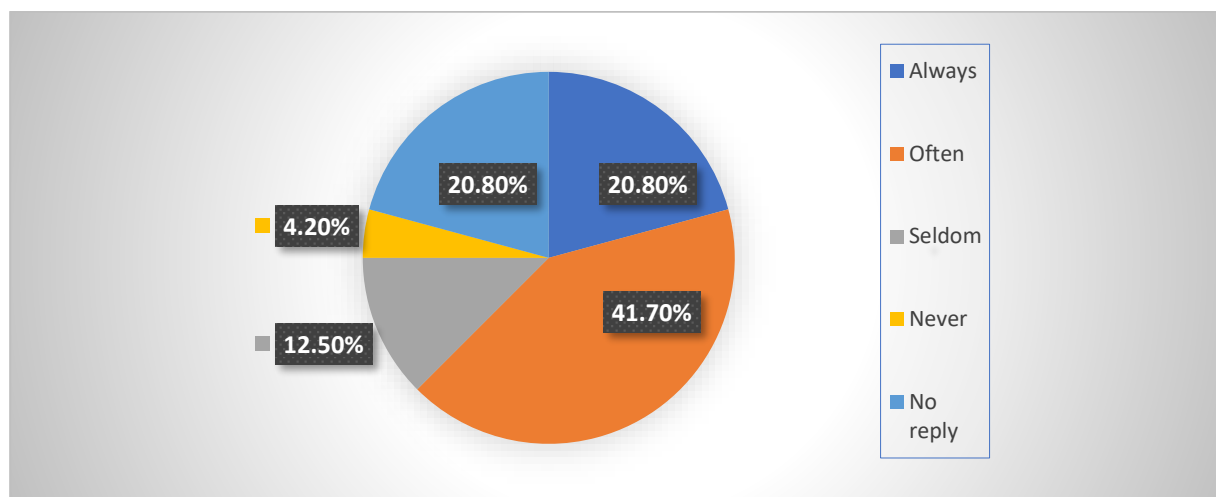
When asked whether the staff did anything they could to relieve pain while in the hospital, it was rated well: more than 70% of respondents answered positively, 25% had difficulty answering, and 4.2% answered negatively. The next question asked whether the health care staff explained information about the drug's indications and possible side effects before giving the new medication. Here, 50% answered positively, and 25-25% either had difficulty answering or gave a negative answer.

After leaving the medical facility, only 33.3% of the patients clearly understood the prescription of all the medications they received, and the rest were either vague, did not understand, or had difficulty answering.

In addition, 50% of the patients evaluated the general state of health positively (practically healthy), healthy - 37.5% and 12.5% - chronic patients. Patients indicate that during their stay in the hospital they cleaned the room and bathroom every morning and evening - 33.3 %, once a day 25 % and 33.3 % - it was difficult to answer.

Patients believe that during their stay in the hospital it was always quiet at night in the department - 50%, more or less - 45.7% and never - 4.3% 58.3% of patients would recommend this medical facility to their friends and relatives, 33.5% could not answer, and 8.2% would not recommend it; That is, a total of 41.7% of patients do not have a positive answer to this question. The last question can be considered as a kind of assessment of the above questions: when evaluating hospitals on a 5-point scale, the majority of former patients, 41.7%, rated it with only 3 points, 25-25% - with 4 and 5 points, 8.3% - with 2 points. In 2014, the US Department of Health developed a system for evaluating the quality of medical care and patient safety in hospitals to create a comprehensive rating; A working group for the protection of patients' rights was formed, as well as a group of technical experts. As a result, a comprehensive hospital ranking calculation methodology based on 60 indicators was developed; To this is added general information from each hospital, which is further used for standardization (information about the hospital, the treatment technologies used, the methods used to Prevent surgical complications and the

price).

The above evaluation methodologies were related to subjective evaluation indicators, where the patient is the most important; As for the objective indicators used to create a comprehensive rating of medical organizations, they are divided into the following categories:

1. Mortality of patients in the hospital.
2. Patient safety.
3. Frequency of repeated hospitalization.
4. Preventive orientation of medical services.
5. Timeliness of medical assistance.
6. Efficiency of use of diagnostic equipment.
7. Patient satisfaction.

It is clear that in the case of subjective or objective indicators and ratings, the greatest importance is given to the patient. For example, patients rate how well the nurses and doctors communicated, how responsive the hospital staff was, how thorough the pain management was, and how clean and quiet the hospital environment was. In general, patients are the best source of information on these topics. Another study conducted by Georgian scientists confirms the need to implement the accreditation process of hospitals in Georgia: 97% of managers, 93% of doctors and 89% of nurses considered it necessary to implement the accreditation process in Georgia.

Conclusions

The success of a medical facility largely depends on providing quality services and ensuring patient satisfaction. To achieve quality assurance of health care services, it is necessary to continuously involve management, medical staff and patients in the improvement of medical services, which should be part of the marketing strategy. The system of assessment and accreditation of health care organizations, which is implemented by JCI through accreditation, is recognized in the world and focuses on the patient. Subjective indicator of evaluation of medical services - the perception of the quality of hospital services received by Georgian patients is close to the average, although studies should be continued and should reflect the evaluations of patients of specific inpatient institutions. It should be noted here that conducting similar studies is quite complicated and often requires permission from the institution. Also, it is very important to compare the data with the objective indicators of the assessment.

Facebook surveys have shown that patients generally positively perceive the quality of inpatient services provided in the country And they are more or less satisfied. However, there are issues that medical company representatives need to consider.

პაციენტების კმაყოფილება, როგორც სამედიცინო ორგანიზაციების საქმიანობის შეფასების უმთავრესი ინდიკატორი

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აბსტრაქტი

ეკონომიკური აქტივობების, დასაქმების, ახალი ტექნოლოგიების განვითა-რების თვალსაზრისით, ჯანდაცვა ერთ-ერთი უმნიშვნელოვანესი სექტორია, როგორც მსოფლიოში, ისე საქართველოში. სამედიცინო მომსახურების ბაზარზე წარმატების მისაღწევად, უმნიშვნელოვანესია სამედიცინო მომსახურების ხარისხზე მუდმივი ზრუნვა, რაც სამედიცინო დაწესებულებას აქცევს ბაზრის ლიდერად და მოთხოვნად დაწესებულებად. ჯანდაცვის სერვისების ხარისხის უზრუნველყოფის, მართვის და გაუმჯობესების მისაღწევად, აუცილებელია, მენეჯმენტის, სამედიცინო პერსონალის, პაციენტებისა და მათი ახლობლების უწყვეტი ჩართულობა სამედიცინო სერვისების სრულყოფის საქმეში, რაც მარკეტინგული სტრატეგიის ნაწილი უნდა იყოს.

ხარისხიანი სამედიცინო მომსახურება პაციენტისთვის განსაკუთრებით მნიშვნელოვანია, მათ მიერ სამედიცინო მომსახურების ხარისხის აღქმა კი სუბიექტურია, შესაბამისად, მიზანშეწონილია, მუდმივად იყოს ყურადღება გამახვილებული პაციენტთა კმაყოფილების კვლევაზე. მოწინავე ქვეყნებში დიდი ყურადღება ეთმობა სამედიცინო ორგანიზაციის საქმიანობის შეფასებას. ეს განპირობებულია სამედიცინო მომსახურების გაწევის მუდმივად ცვალებადი ინოვაციური ტექნოლოგიებით და მათი ღირებულების ზრდით. ტექნოლოგიების გართულება იწვევს პაციენტებისთვის რისკების ზრდას.

აღსანიშნავია, რომ, ერთის მხრივ, არსებობს ჯანდაცვის ორგანიზაციების შეფასების და აკრედიტაციის მინიჭების გამოცდილება (JCI), ხოლო, მეორეს მხრივ, განვითარებული ქვეყნები სამედიცინო დაწესებულებების შესაფასებლად იყენებენ გარკვეულ ინდიკატორებს. ჯანდაცვის მსოფლიო ორგანიზაციამ (WHO) შეიმუშავა, საავადმყოფოს მუშაობის შესაფასებლად და შესადარებლად, რეკომენდირებული ინდიკატორების სია და შეფასების წესი.

სტატიაში განხილულია ჯანდაცვის სერვისების ხარისხის უზრუნველყოფის უცხოური გამოცდილება, სამედიცინო ორგანიზაციების საქმიანობის შეფასების ინდიკატორები, საქართველოს კლინიკებში სტაციონარული სერვისებით პაციენტთა კმაყოფილების ონლაინ კვლევა.

საკვანძო სიტყვები: ჯანდაცვის მარკეტინგი, სამედიცინო სერვისების ხარისხი, ანკეტური გამოკითხვა, პაციენტის კმაყოფილება.

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The role of strategic marketing in the market space of medicine

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Abstract

The development of organizational processes in a medical organization is primarily determined by market efficiency and ensuring a competitive and safe environment. The mentioned circumstance indicates the correspondence between the business capabilities of the clinic and the current changes in the market, which consequently leads to a positive transformation in the treatment and business processes of the medical organization. The economic model of the organization can be perceived as the basis of strategic planning. A strategic approach in modern conditions ensures effective use of organizational advantages and neutralization of the factors that determine the vulnerability of the industry in the near term. The economic model of a medical organization is a representation of economic processes. The creation of the model should be consistent with the objectives of the study. The purpose of developing an economic model is to create a strategic plan through which strategic initiatives will be evaluated. The economic model corresponds to the development possibilities of the company. The model may undergo adjustments to take into account organizational and market changes.

Keywords: strategic initiative, market security, Economic model of medicine, sectoral behavior, marketing value, relevant market.

Introduction

The scheme of the economic model of the medical organization can be completed and expanded in the following directions: scenario analysis, financial analysis, detailing of the medical service, optimization of the structure.[1]

The economic model of the medical system can be used in the following situations:

1. Analysis of activity results in perspective - in this direction, the economic model allows to

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[1] Greasley A. – operations management. 2013 (114)

2. evaluate the influence of factors on the results of future activities, to determine weak areas and to plan future measures taking into account past results. Based on the mentioned, the contribution of individual structural services of the clinic to the overall result will be evaluated;

Elaboration of the development strategy of the medical organization - this process allows for the development of new initiatives that will contribute to the expansion of the creative skills of medical employees.

Marketing is a market-oriented corporate management concept in which marketing objectives, strategies and measures are defined and implemented in such a way that comparative competitive advantages arise in the eyes of the consumer [1-6]. The basics of strategic marketing are: goal, strategy and event. The following question is related to the goal - what does the company want? Strategyasks the question - how will we achieve the goal? The event is related to the question - what exactly should the company do for this?

Strategic elements of the market segment: 1. Strategic focus - sales volume. 2. Positioning - value delivery and sales objective. 3. Implementation program - creating a functional program.[2] The following preconditions ensure the increase in the sales price: increase in customer retention, increase in product consumption by the customer, attraction of competitor's buyers, provision of new deals. An increase in profit and return on investment is provided by the following prerequisites: price increase, improvement of sales structure, reduction of operating costs, improvement of asset utilization.

Based on the situation analysis, an economic model was developed in the medical field. The determinants of this model are presented in Table 1.

Table 1. *Economic model block in the medical field.*

block name	Purpose of the block	the result obtained
sale[3]	Medical service offer	Number of provided medical services
Production - the field of supply	Provision of medical personnel and medical technology to carry out the production program	Total cost of raw materials purchased

[2] Hoffmann S. – angewandtes gesundheitsmarketing 2010 (143)

[3] Cellucci L. - Healthcare Marketing: A Case Study Approach (Gateway to Healthcare Management) 2013 (104)

stock[4]	The change in inventory is proportional to the changes made in the production and supply plan.	Medical supplies at the end of the year.
financing	Demand for raised funds. Cash flow plan.	Profit plan and its actual amount.

Research method

An effective marketing strategy shows how the medical facility provides a differentiating advantage. In order to achieve a comparative advantage, the clinic may apply the following behavior:

1. The clinic performs actions that competitors cannot repeat, because they do not possess sufficient knowledge and resources;

The clinic's competitors can benefit from its strategy, but they will not implement it;

2. The medical entity assumes that a competitor may resort to copying its strategic efforts, but is convinced that its competitor will receive less benefit as a result;

3. The clinic believes that its actions will benefit both it and its competitor.

Strategic marketing includes the following directions: goal, strategy, event. Their content is given in scheme 1.

Scheme 1. A practical model of strategic marketing.
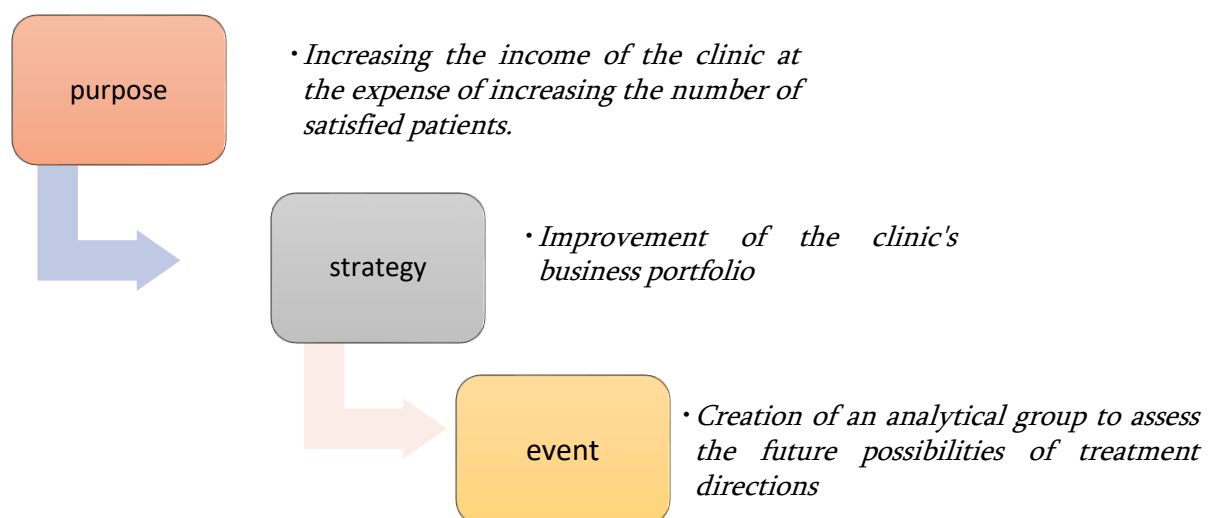
- purpose — •Increasing the income of the clinic at the expense of increasing the number of satisfied patients.
- strategy — •Improvement of the clinic's business portfolio
- event — •Creation of an analytical group to assess the future possibilities of treatment directions

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[4] Harms F. - Gesundheitsmarketing als Managementkonzept. Health Care Competence Center Zürich 2010 (44)

Individual directions of sectoral behavior in the medicine market are presented in scheme 2.

Scheme 2. Model of sectoral trends.

Behavior of providing medical services	• The process of concentration in a transaction • polarization of action • Regression integration
consumer behavior	• Guided by the interests of patients • Ensuring reinforcing relationships
Supplier behavior	• Progressive integration • Creating a strategic alliance • Forming a modular corporation
competitive behavior	• Global competition • Development of horizontal trends • Ensuring market safety

Market analysis allowed us to see the problems that may occur in the medical field. The problematic directions are presented in Table 2.

Table 2. Market problems in the medical field.

problematic directions	potential problem	possible solution
medical service	cost increase. Inadequate degree of satisfaction with the segment's service	Modular design. A guarantee of perceived value

Advertisement	Responding to various challenges related to consumer value	Consistency of messages
Medical staff	Inefficiency of activity	Additional training and narrow specialized training
price	Difficulty in price flexibility when switching from segment to segment	The possibility of differentiation

Result

Strategy differentiation:

1. Predominance of quality of medical service;
2. Differentiation of the range of medical services and internationalization of markets (in order to increase costs and arrange new treatment facilities);
3. Increasing demand for capital;
4. Risk increase;
5. Strategic response.

Sectoral challenges in the medical field include the following determinants:

a) trends in consumer behavior;
b) trends in the behavior of providing medical services;
c) tendencies of competitive behavior;
d) supplier behavior trends.

The following directions are integrated into the sectoral challenges:

1. Political-public challenges: social-demographic changes; free society; multifunctional society; Change of values and quality of working life.

2. Economic challenges: economic integration with European medical institutions; growth momentum; Moderation of economic spheres.
3. Technological challenges.

All companies consider themselves to be leaders, but market realities suggest otherwise. The company should focus on positive thinking and persuasive information provision. The marketing manager must anticipate the current situation. It is important for the leader to strengthen the market position and positioning in the consciousness of the patient. It addresses the revitalization of the healing line. "Forced reduction" is also effective. The market leader feels the "force of friction" and is obliged to carefully assess the competitor's potential. When competing with advertising slogans, "psychological pressure" is on the leader's side. The market leader is focused on financial conservatism. Based on the "pulse of the market", the leader must always have enough financial resources to repel the attack.

The relevant market (market response) includes all competing medical services that the supplier considers when planning sales. At which markets - that is, which patients and competitors - should the marketing strategy and activities be directed? (The issue refers to market structuring). The relevant or actionable market line runs through the relevance of purchasing behavior. In the process of market segmentation, the interests of consumer groups should be strengthened, and the company is obliged to treat patients based on their value contribution (integrating the customer value-oriented approach into the classic segmentation system).

Characteristics of strategic business areas: similar products, competitors and customers; Market Task ("Unique Business Mission"); existence of an independent strategic action plan; The company's potential for success.

The medical organization should be associated with the following indicators. The positioning map of the medical facility is given in scheme 3.

Scheme 3. Association network of market organization (clinic) (positioning).
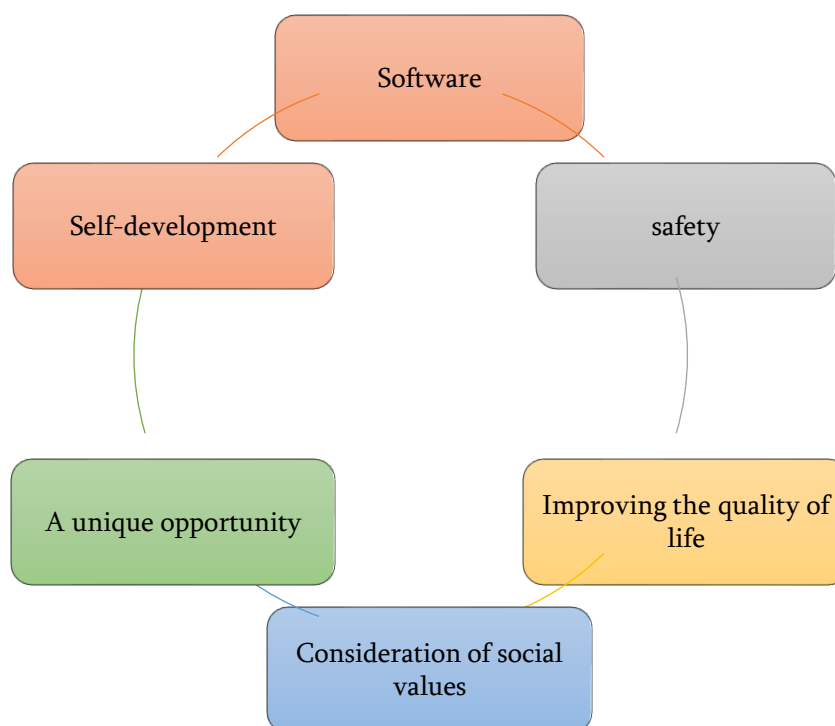
The future of the company is predominantly determined by the following types of processes:

1. Strategic investment;
2. Creating a service;
3. Order execution.

The mentioned market process is related to the category of business values. From the business value, the emphasis is taken to the marketing

value, in which the following indicators are integrated:

➢ Image - legitimacy of the organization in the consumer market - public recognition

➢ Number of new medical services

➢ Number of patents

➢ Providing a medical technological advantage

➢ Number of patients retained and loyalty

➢ The organization's ranking position in the market

➢ Compliance of the medical service with market requirements

სტრატეგიული მარკეტინგის როლი მედიცინის საბაზრო სივრცეში

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აბსტრაქტი

სამედიცინო ორგანიზაციაში ორგანიზაციული პროცესების განვითარება უპირველეს ყოვლისა განისაზღვრება ბაზრის ეფექტიანობითა და კონკურენტული და უსაფრთხო გარემოს უზრუნველყოფით. აღნიშნული გარემოება მიუთითებს შესაბამისობაზე კლინიკის ბიზნეს-შესაძლებლობებსა და ბაზარზე მიმდინარე ცვლილებებს შორის, რაც შესაბამისად განაპირობებს პოზიტიურ ტრანსფორმაციას სამედიცინო ორგანიზაციის სამკურნალო და ბიზნეს-პროცესებში.

ორგანიზაციის ეკონომიკური მოდელი შეიძლება აღქმული იქნეს, როგორც სტრატეგიული დაგეგმვის საფუძველი. სტრატეგიული მიდგომა თანამედროვე პირობებში უზრუნველყოფს ორგანიზაციული უპირატესობების ეფექტურ გამოყენებას და იმ ფაქტორების ნეიტრალიზაციას, რომლებიც განისაზღვრავენ დარგის დაუცველობას ახლო პერსპექტივაში. სამედიცინო ორგანიზაციის ეკონომიკური მოდელი – არის ეკონომიკური პროცესების წარმოდგენა. მოდელის შექმნა შესაბამისობაში უნდა მოდიოდეს კვლევის მიზნებთან.

ეკონომიკური მოდელის დამუშავების მიზანია სტრატეგიული გეგმის შექმნა, რომლის საშუალებითაც მოხდება სტრატეგიული ინიციატივების შეფასება. ეკონომიკური მოდელი შესაბამისობაში მოდის კომპანიის განვითარების შესაძლებლობებთან. მოდელმა შეიძლება განიცადოს კორექტირება ორგანიზაციული და საბაზრო ცვლილებების გათვალისწინებით.

საკვანძო სიტყვები: სტრატეგიული ინიციატივა, საბაზრო უსაფრთხოება, მედიცინის ეკონომიკური მოდელი, სექტორალური ქცევა, მარკეტინგული ღირებულება, რელევანტური ბაზარი.

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Dental patient satisfaction survey in Georgia

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Article History

Abstract

The study of customer satisfaction in general and especially in the medical field, including dentistry, is important nowadays. The mentioned issue is relevant in Georgia. It is true that dental services are unfortunately not available for the majority of the population in our country today, but nevertheless, it is also interesting to see how satisfied those who use the services.

71.2% of respondents are satisfied with the results of dental treatment, 3.8% have a neutral attitude, and 25.0% are dissatisfied.

80.1% of respondents are satisfied with the level of service received from the dentist, 7.4% are neutral, and 12.6% are dissatisfied.

The level of satisfaction varies significantly depending on the regions of Georgia, as well as gender and age.

According to the results of the survey, the level of satisfaction with dental services and satisfaction with treatment results is significantly higher than dissatisfaction, but nevertheless, dissatisfaction is still high (a quarter of respondents are somewhat or very dissatisfied). This indicates the not very high level of quality of dental services and the lack of qualified personnel.

The results of the study are also interesting in the sense that the majority of patients (about 50%) visit to the dentist only when they have faced some oral disease.

Keywords: Dental patient satisfaction, statistical survey.

Introduction

Determining the satisfaction level of dental patients is important in Georgia today. However, there are no exact statistics in this direction. There are only a few studies, some of which are limited to the hospital and ambulatory sector, and some to single clinical studies. This is what led us to conduct a Comprehensive study in Georgia, Which included all regions and all age groups in the country as a whole.

Georgia is one of the low-income countries. The majority of the population does not have access to dental services. Poverty and low incomes are also reflected in the inability to receive proper treatment for oral diseases. Also the quality of dental services is not high. One

of the directions in the 2023-2030 strategy of the World Health Organization is the issue of highly qualified personnel [1].

A dental patient satisfaction survey will help us to understand the current level of satisfaction. Also identify and define the weaknesses that cause dissatisfaction and make future plans to eliminate it.

Material and Methods

The aim of the survey was to study the satisfaction level of dental patients in Georgia. For this purpose, we compiled a questionnaire, which included 11 questions, in accordance with the general cleanliness of the clinic, the reception, the comfort of the waiting area, the provided dental services, and the satisfaction with the results of the treatment.

We used descriptive and inferential statistics methods in the research: statistical observation method (in particular, sample survey method), statistical grouping, frequency distributions (relative and cumulative frequency), crosstabulation, statistical graphs, non-parametric statistical criterion for testing hypotheses (chi-square criterion).

The survey was conducted in June 2024. 810 respondents were interviewed in the survey. The sample survey covered the population of all ages and sexes of all regions of Georgia. This study is a kind of continuation of the statistical observation conducted by us in May 2023. Data were processed in the statistical software package IBM SPSS Statistics 26.

Discussion of obtained results

The reliability of the conducted survey is confirmed by Cronbach's alpha coefficient, the value of which is equal to 0.893.

As a result of the survey, it was revealed that 71.2% of the respondents are satisfied with the results of the received dental services, 3.8% have a neutral attitude, and 25.0% are dissatisfied.

To the question, "How satisfied were you with the results of your dental treatment", 40.4% of respondents answered that they were very satisfied, 30.8% - somewhat satisfied, 21.2% - somewhat dissatisfied, and 3.7% - very dissatisfied. The corresponding frequency distribution table is given in Table 1.

Table 1. Satisfaction with the results of dental treatment

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	very satisfied	327	40.4	40.4	40.4
	Somewhat satisfied	250	30.8	30.8	71.2
	neutral	31	3.8	3.8	75.1
	Somewhat dissatisfied	172	21.2	21.2	96.3
	very dissatisfied	30	3.7	3.7	100.0
	Total	810	100.0	100.0	

The mentioned results are visible also in the first chart:
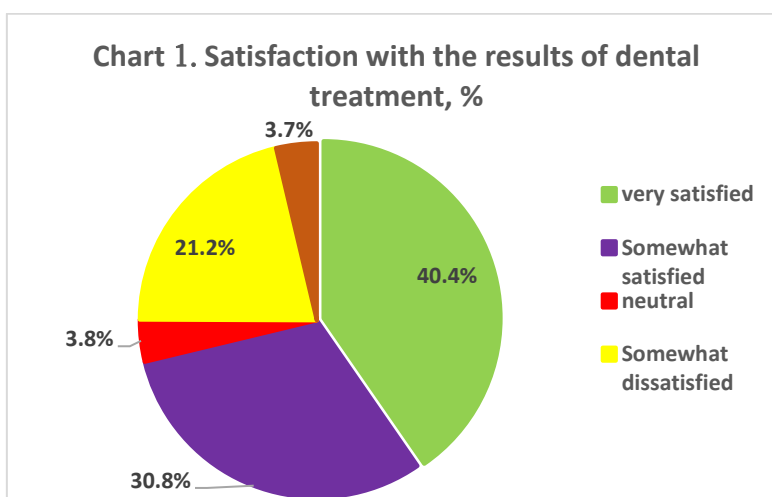
Chart 1. Satisfaction with the results of dental treatment, %

- very satisfied
- Somewhat satisfied
- neutral
- Somewhat dissatisfied

80.1% of respondents are satisfied with the level of service received from the dentist, 7.4% are neutral, and 12.6% are dissatisfied.

The frequency distribution table below confirms the abovementioned.

Table 2. Satisfaction with the level of service received from the dentist

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	very satisfied	377	46.5	46.5	46.5
	Somewhat satisfied	272	33.6	33.6	80.1
	neutral	60	7.4	7.4	87.5
	Somewhat dissatisfied	91	11.2	11.2	98.8
	very dissatisfied	10	1.2	1.2	100.0
	Total	810	100.0	100.0	

The results of the survey are problematic and thought-provoking in the sense that the majority of patients (about 50%) visit to the dentist only when they have faced some oral disease. To the question: "How often do you go to the dentist", 47.7% of respondents visit the doctor in case of a problem, 19.4% - once in 2-3 years, about 25% - once a year and only 7.8% - every 6 months.

The following table and graph clearly show the abovementioned.

Table 3. Frequency of visits to the dentist

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Every 6 months	63	7.8	7.8	7.8
	once in a year	204	25.2	25.2	33.0
	Once every 2-3 years	157	19.4	19.4	52.3
	Only when I have a problem	386	47.7	47.7	100.0
	Total	810	100.0	100.0	

Chart 2. Frequency of visits to the dentist, %
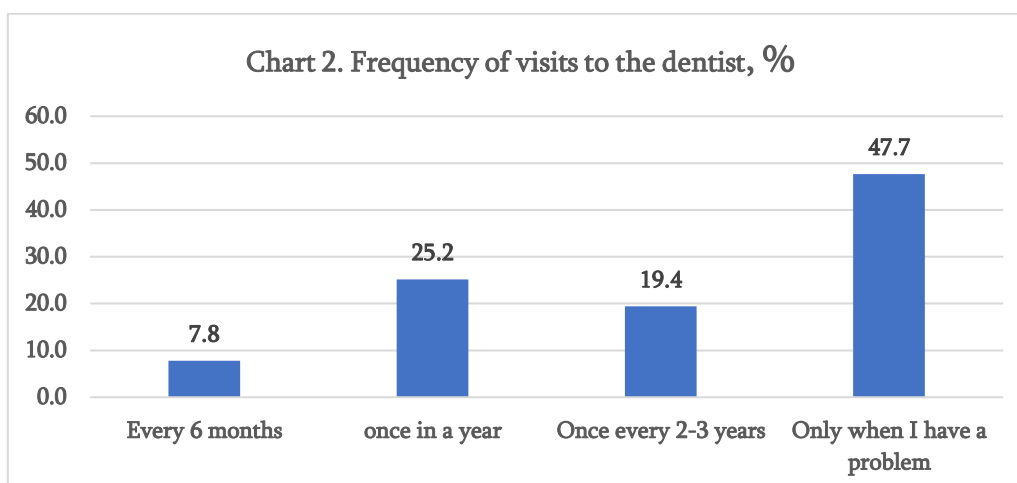
According to the survey, satisfaction with the results of dental treatment differs by gender and is presented as follows:

Table 4. Level of satisfaction with treatment results by gender

		very satisfied	Somewhat satisfied	neutral	Somewhat dissatisfied	very dissatisfied	Total
Female	Count	266	169	18	112	20	585
	% within	45.5%	28.9%	3.1%	19.1%	3.4%	100.0%
Male	Count	61	81	13	60	10	225
	% within	27.1%	36.0%	5.8%	26.7%	4.4%	100.0%
Total	Count	327	250	31	172	30	810
	% within	40.4%	30.9%	3.8%	21.2%	3.7%	100.0%

The following graphical representation gives more visibility in the difference in satisfaction by gender:

Chart 3. Level of satisfaction with treatment results by gender
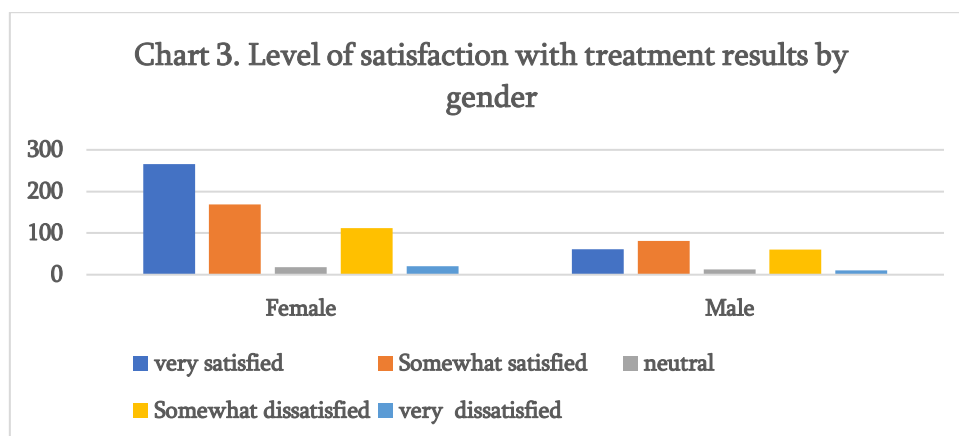
To confirm whether there is a significant statistical difference in satisfaction with the results of dental treatment by gender, we used the chi-square criterion for testing hypotheses (Table 5).

Table 5. Chi-square criterion

Tests Chi-Square			
	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	24.117[a]	4	.000
Likelihood Ratio	24.724	4	.000
Linear-by-Linear Association	15.613	1	.000
N of Valid Cases	810		

As can be seen from the table, the significance level α is equal to 0.000, which is much less than the preselected significance level of 0.05. Thus, we can conclude that there is a significant statistical difference in satisfaction with the results of dental services according to gender.

According to the survey, the satisfaction with the results of dental treatment is also different regionally and can be presented as follows:

Table 6. Level of satisfaction with treatment results by region			very satisfied	Somew hat satisfied	neutral	Somew hat dissatisfied	very dissatisfied	Total
	Tbilisi	Count	215	171	29	116	30	561
		% w ithin	38.3%	30.5%	5.2%	20.7%	5.3%	100.0%
	Adjara A.R.	Count	19	0	0	1	0	20
		% w ithin	95.0%	0.0%	0.0%	5.0%	0.0%	100.0%
	Guria	Count	11	1	0	8	0	20
		% w ithin	55.0%	5.0%	0.0%	40.0%	0.0%	100.0%
	Imereti	Count	21	20	2	14	0	57
		% w ithin	36.8%	35.1%	3.5%	24.6%	0.0%	100.0%
	Kakheti	Count	16	11	0	5	0	32
		% w ithin	50.0%	34.4%	0.0%	15.6%	0.0%	100.0%
	Mtskheta-Mtianeti	Count	8	10	0	4	0	22
		% w ithin	36.4%	45.5%	0.0%	18.2%	0.0%	100.0%
	Racha-Lechkhumi and Kvemo	Count	0	19	0	1	0	20
		% w ithin	0.0%	95.0%	0.0%	5.0%	0.0%	100.0%
	Samegrelo-Zemo Svaneti	Count	0	0	0	10	0	10
		% w ithin	0.0%	0.0%	0.0%	100.0%	0.0%	100.0%
	Samtskhe-Javakheti	Count	0	18	0	2	0	20
		% w ithin	0.0%	90.0%	0.0%	10.0%	0.0%	100.0%
	Kvemo Kartli	Count	16	0	0	2	0	18
		% w ithin	88.9%	0.0%	0.0%	11.1%	0.0%	100.0%
	Shida Kartli	Count	21	0	0	9	0	30
		% w ithin	70.0%	0.0%	0.0%	30.0%	0.0%	100.0%
Total		Count	327	250	31	172	30	810
		% w ithin	40.4%	30.9%	3.8%	21.2%	3.7%	100.0%

The level of satisfaction and results are also different by age groups, which is shown by the table below:

			very satisfied	Somewhat satisfied	neutral	Somewhat dissatisfied	very dissatisfied	Total
Table 7. Level of satisfaction with treatment results by age groups								
Age	till13	Count	11	10	1	20	0	42
		% within ასაკი	26.2%	23.8%	2.4%	47.6%	0.0%	100.0%
	13-19	Count	29	12	14	26	10	91
		% within ასაკი	31.9%	13.2%	15.4%	28.6%	11.0%	100.0%
	20-39	Count	129	130	12	71	0	342
		% within ასაკი	37.7%	38.0%	3.5%	20.8%	0.0%	100.0%
	40-60	Count	150	31	4	50	20	255
		% within ასაკი	58.8%	12.2%	1.6%	19.6%	7.8%	100.0%
	More then 60	Count	8	67	0	5	0	80
		% within ასაკი	10.0%	83.8%	0.0%	6.3%	0.0%	100.0%
Total		Count	327	250	31	172	30	810
		% within ასაკი	40.4%	30.9%	3.8%	21.2%	3.7%	100.0%

To test the statistical significance of differences in satisfaction by regions and age groups, we also used the chi-square criterion for hypothesis testing. In both cases, the significance level α is much less than the preselected significance level of 0.05. Thus, we can conclude that there is a significant statistical difference in satisfaction with the results of dental services by regions and age groups.

Regarding the cleanliness of the dental clinic, the comfort of the waiting area, the friendly atmosphere at the reception desk, approximately 95% of the respondents express their satisfaction.

Conclusions

We can formulate the conclusions obtained as a result of the research as follows:

➤ 71.2% of respondents are satisfied with the results of dental services in Georgia, 3.8% have a neutral attitude, and 25.0% are dissatisfied. To the question, "How satisfied were you with the results of your dental treatment", 40.4% of respondents answered that they were very satisfied, 30.8% - somewhat satisfied, 21.2% - somewhat dissatisfied, and 3.7% - very dissatisfied.

➤ 80.1% of respondents are satisfied with the level of service received from the dentist, 7.4% - neutral, and 12.6% - dissatisfied. To the question, "How satisfied were you with the level of service received from your dentist", 46.5% of respondents answered that they were very satisfied, 33.6% - somewhat satisfied, 11.2% - somewhat dissatisfied, and 1.2% - very dissatisfied.

➤ Satisfaction with the level of dentist service and treatment results is different depending on gender, age and place of residence (regions of Georgia).

➤ About 80% of the respondents visit to the

dentist on the recommendation of acquaintances, friends or family members.

➤ About 50% of the respondents visit to the dentist only when they face some kind of oral disease problem.

Finally, recommendations can be formulated as follows:

➤ Appropriate policy should be implemented to improve the quality of dental services (including qualification improvement), which will increase the level of dental patient satisfaction.

➤ Appropriate policy should be taken in the direction that the dentist's primary focus will be on the patient and his care instead of being focused on business and making as much profit as possible. Improve accessibility on dental services to the majority of population.

სტომატოლოგიური პაციენტის კმაყოფილების გამოკვლევა საქართველოში

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აბსტრაქტი

მომხმარებელთა კმაყოფილების შესწავლა ზოგადად და განსაკუთრებით სამედიცინო სფეროში, მათ შორის სტომატოლოგიაში, უმნიშვნელოვანესია. აღნიშნული საკითხი აქტუალურია საქართველოში. მართალია, სტომატოლოგიური მომსახურება მოსახლეობის უმრავლესობისთვის დღეისათვის ჩვენს ქვეყანაში სამწუხაროდ ხელმიუწვდომელია, მაგრამ მიუხედავად ამისა, საინტერესოა ასევე ისიც, ვინც სარგებლობს აღნიშნული მომსახურებით, რამდენად კმაყოფილია მისი შედეგებით.

გამოკითხულთა 71,2% კმაყოფილია მიღებული სტომატოლოგიური მკურნალობის შედეგით, 3,8%-ს ნეიტრალური დამოკიდებულება აქვს, 25,0% კი -უკმაყოფილოა.

გამოკითხულთა 80.1% კმაყოფილია სტომატოლოგისგან მიღებული მომსახურების დონით, 7.4% ნეიტრალური, ხოლო 12.6% - უკმაყოფილო.

კმაყოფილების დონე მნიშვნელოვნად განსხვავდება საქართველოს რეგიონების, ასევე სქესისა და ასაკის მიხედვით.

კვლევის შედეგებით, სტომატოლოგიური მომსახურების კმაყოფილების დონე და მკურნალობის შედეგებით კმაყოფილება მნიშვნელოვნად მაღალია უკმაყოფილებაზე, მაგრამ მიუხედავად ამისა, მაინც დიდია უკმაყოფილება (გამოკითხულთა მეოთხედი ნაწილი გარკვეულწილად ან ძალიან უკმაყოფილოა). აღნიშნული მიუთითებს სტომატოლოგიური მომსახურების ხარისხის არც თუ ისე მაღალ დონეზე და კვალიფიციური კადრების ნაკლებობაზე.

პრობლემატური და დამაფიქრებელია კვლევის შედეგები იმ კუთხითაც, რომ პაციენტთა უმრავლესობა (დაახლოებით 50%) სტომატოლოგს მხოლოდ მაშინ მიმართავს, როდესაც პირის ღრუს რომელიმე დაავადება შეაწუხებს.

საკვანძო სიტყვები: სტომატოლოგიური პაციენტის კმაყოფილება, სტატისტიკური გამოკვლევა.

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The modern methods of treatment of clinical manifestations of benign hypermobile joints syndrome (hypermobility spectrum disorders)

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Abstract

The thesis discusses the role of hippotherapy in correction of clinical symptoms of musculoskeletal system of (BHMJS). In recent years, the number of children with BHMJS has been increased. Therefore, the implementation of new method of treatment is urgent and well- timed. Due to imperfection of traditional treatment, the syndrome is accompanied with secondary complications what led us to determine the effectiveness of ride-therapy in correction of BHMJS.

The goal of the research is the development of the specific tactic of hippotherapy. The results of the initial research indicate the high effectiveness of hippotherapy in correction of clinical symptoms of musculoskeletal system of BHMJS.

Keywords: benign hypermobile joints syndrome (BHMJS), hippotherapy, hypermobile joints syndrome (HMJS), fibromyalgia, hypermobility spectrum disorders.

Introduction

According to the International classification of 2017 year, in the opinion of a certain group of scientists [1], benign hypermobile joints syndrome or hypermobility spectrum disorder appears to be a mediator (transitional) link between the norm and pathology of genetically determined connective tissue [2, 3].

Undoubtedly that they have a genetic basis, although its genetic markers are unknown [4]. Based on the various evidences, its distribution varies within the limits of 4-13% to 25% [5, 6]. 10% of the children and adolescents with this syndrome is subjected to physical and/or psycho-social dysfunction (anxiety, depression, chronic fatigue, etc.) in 0.5-2%

of cases, in an average [7, 8]. Among clinical manifestations joint pains are more frequently observed, which can be both mono, and polyarticular, generalized or symmetric. A sharply bordered, local, joint short-term pains, especially in knee and ankle- tibia joint are characteristic in children. Muscle cramp and fibromyalgia may be revealed [3, 5, 9, 10]. For the treatment of BHMJS and prevention of secondary complications, as well as for the improvement of muscular strength and proprioception the isometric exercises are predominantly required. It is necessary for the restriction of all those movements and activities, which may lead to an excessive movement in the joints, an excessive stretching of tendons and muscles, which requires to implement a new method in the treatment tactics. As such method, we consider hippotherapy, which in its biomechanical essence appears to be a pathogenetic method for BHMJS treatment.

The goal of our research was to establish the effectiveness of hippotherapy method for the manifestation, treatment and prophylactics of benign hypermobile joints syndrome.

Material and Methods

Total of 96 children at the age of 7-14 years were involved in this research. These children were divided into 2 age groups: 7-11 years old (43 children) and 11-14 years old (53 children). There were 2 subgroups in each group: one subgroup was treated with hippotherapy procedures using the method developed by us, while the second subgroup was treated with therapeutic gymnastics using a traditional method.

The methods of the research

The following clinical functional researches in the dynamics were carried out: the determination of joint hypermobility using Beighton's table; the study of some anthropometric data (goniometry, dynamometry); dynamometry of quadriceps femoris, biceps brachii and triceps muscles, as well as wrist dynamometry; the determination of abdominal press and spinal extensor muscles strength and endurance using functional tests; goniometry and sonography of knee joint.

The methods for treatment

For the treatment of BHMJS, the hippotherapy procedures have been used according to the method developed by us and a traditional method of therapeutic gymnastics. The treatment using hippotherapy method consisted of 2 stages: the goal of the first stage was to create a horse-rider's stereotype, or the maintenance of balance in the saddle during any gait of the horse and the development of basic skills for horse driving; the goal of the II main therapeutic training was: the strengthening of limbs and torso muscles, developing of musculoskeletal sensation, the improvement of stability and proprioception of joints, etc. The duration of each stage made up 3 months, a number of procedures during one course was 36-40, duration - 45 min. three times a week. In order to strengthen proprioception mechanisms, we developed specific methods and therapeutic tactics of hippotherapy. On the basis of clinical studies, the patients were given individually selected course of exercises. During pronounced strong recurvation a joint fixator was used in the procedures. With the aim of stability increase and reduction of micro traumas, along with

strengthening of periarticular muscles, the duration and frequency of fixator use gradually reduced.

The results

Based on the results obtained a positive dynamics was observed in all the groups. But, reliable high results were recorded in the groups treated with hippotherapy. In particular, the indicators of Beighton's score assessment decreased: recurvation in both knee joints ($p < 0.05$, see the Table); recurvation of the both elbow joint in 11-14 age group ($p < 0.01$; $p < 0.05$); in the both groups, the strength of right and left biceps brachii reliably increased and was reliably high ($p < 0.05$), than in control group; using dynamometry, the analogous results were obtained regarding triceps brachii ($p < 0.001$, $p < 0.05$) and quadriceps femoris ($p < 0.001$, $p < 0.05$) muscles ($p < 0.001$, $p < 0.05$); the strength and endurance of abdomen press and spinal extensor muscles improved.

Table of the Results

Age	Group	Recurvation of knee joint in degrees				P <
		The Initial data ±		The last data		
		right	left	right	left	
11-14 years	main	14,43±0,49 n = 15	14,13±0,49 n = 12	12,58±9,32 n = 15	12,53±0,44 n = 12	D-S 0,05
	control	14,17±0,43 n = 16	15,20±0,67 n = 16	13,81±0,42 n = 16	14,07±0,42 n = 15	_
	P <	_	_	0,05	0,05	

Discussion

The advantage of hippotherapy treatment is conditioned by the peculiarities of horse-riding biomechanics, as compared to other methods of treatment. Among many factors of its impact, the following are very important: the activation of proprioception impulses, the strengthening of those muscles, which are necessary for riding status, conditioning a significant increase in muscular tonus, as well as the minimization of excessive movements in the joints and the avoidance of possible injuries. Accordingly, the above-said promotes to prevent secondary complications to improve a life style of the adolescents.

Conclusion

Thus, on the basis of the obtained results a high therapeutic effectiveness of hippotherapy during BHMS, as compared to other methods of rehabilitation (therapeutic gymnastics) has Been revealed. It was expressed by a reliable improvement of clinical and functional parameters; decrease in pain in the joints or its complete disappearance; reduction of joint recurvation and hypermobility; increase in strengthening and endurance of torso muscles, and generally by the strengthening of

muscular system of the whole organism, etc.

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