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About the Journal

Bagcilar Medical Bulletin (Bağcılar Tıp Bülteni) (BMB) is periodical scientific publishing of Health Sciences University, İstanbul Bağcılar Training and Research Hospital.This editorially independent, unbiased, international journal periodically publishes peer-reviewed work in the all medical fields on an international scientific basis. Publication language is English for full text and Turkish and English for abstracts. The journal is published in English since December issue of 2016 as an e-journal.

The journal is published quarterly in March, June, September and December.

Original clinical and experimental articles,interesting case studies, and literature reviews made from relevant authors in their brancheswill be accepted for evaluation in BMB.

The editorial policies are based on the "Recommendations for the Conduct, Reporting, Editing, and Publication of Scholarly Work in Medical Journals (ICMJE Recommendations)" by the International Committee of Medical Journal Editors (2017, archived at http://www.icmje.org/) rules.

Owner of the Journal

In the name of T.C. Health Ministary, Health Sciences University, İstanbul Bağcılar Training and Research Hospital, Hospital Administrator Ahmet Yaser Müslümanoğlu, Prof. M.D (T.C. Health Ministary, Health Sciences University, İstanbul Bağcılar Training and Research Hospital, Urology Clinic, Istanbul, Turkey).

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HAKKIMIZDA

Dergi Hakkında

Bağcılar Tıp Bülteni/Bagcilar Medical Bulletin, (BTB) Sağlık Bilimleri Üniversitesi, İstanbul Bağcılar Eğitim ve Araştırma Hastanesinin süreli bilimsel yayınıdır. Uluslararası, hakem değerlendirmeli, İngilizce ve açık erişim olarak yılda 4 sayı(Mart, Haziran, Eylül, Aralık) olarak yayınlanan bilimsel bir dergi olup, tıbbın tüm alanlarındaki bilgi birikiminin uluslararası bilimsel platformda yayılabilmesini amaçlamaktadır. Bu amaçla tıbbın her alanında yapılmış orijinal klinik ve deneysel çalışmalar ve ilginç olgu sunumları ile konusunda uzman yazarların yaptığı literatür derlemeleri yayın için değerlendirmeye alınır.

Bağcılar Tıp Bülteni/Bagcilar Medical Bulletin, yazıların İngilizce dilinde, yazıların özetlerinin Türkçe ve İngilizce dillerinde online olarak yayınlandığı bir dergidir.

Yayın politikaları "Recommendations for the Conduct, Reporting, Editing, and Publication of Scholarly Work in Medical Journals (ICMJE Recommendations)" (2016, http://www.icmje.org/) temel alınarak hazırlanmıştır.

Derginin Sahibi

T.C.Sağlık Bakanlığı Sağlık Bilimleri Üniversitesi, İstanbul Bağcılar Eğitim ve Araştırma Hastanesi adına Hastane Yöneticisi Ahmet Yaser Müslümanoğlu, Prof. M.D (Türkiye Cumhuriyeti Sağlık Bakanlığı Sağlık Bilimleri Üniversitesi, İstanbul Bağcılar Eğitim ve Araştırma Hastanesi, Üroloji Kliniği, İstanbul, Türkiye).

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Açık Erişim, "(hakem değerlendirmesinden geçmiş bilimsel literatürün), internet aracılığıyla; finansal, yasal ve teknik engeller olmaksızın, serbestçe erişilebilir, okunabilir, indirilebilir, kopyalanabilir, dağıtılabilir, basılabilir, taranabilir, tam metinlere bağlantı verilebilir, dizinlenebilir, yazılıma veri olarak aktarılabilir ve her türlü yasal amaç için kullanılabilir olmasıdır". Çoğaltma ve dağıtım üzerindeki tek kısıtlama yetkisi ve bu alandaki tek telif hakkı rolü; kendi çalışmalarının bütünlüğü üzerinde kontrol sahibi olabilmeleri, gerektiği gibi tanınmalarının ve alıntılanmalarının sağlanması için, yazarlara verilmelidir.

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Description

Bagcilar Medical Bulletin is a peer reviewed English journal aiming to publish original research, current review articles, case reports and letters related to all medical fields. The journal is currently published quarterly as online publication. The articles will become freely available to all readers in pdf format as soon as they have been accepted after peer review. Accepted articles will immediately appear as a part of the issue belonging to that publication period. The journal is currently published by Galenos Publishing House. The journal is using online manuscript submission, review and tracking systems.

Editorial Policies and Review Process

Publication Policy

Bagcilar Medical Bulletin considers for publication papers in the following categories:

- Original researches,
- Brief researches,
- Case reports,
- Reviews,
- Letters to the editor

The journal gives high priority to original studies in publication because of aiming to add the findings of searches in Turkey to international scientific knowledge, to share them within the international science milieu and to constitute the introduction of Turkish scientists. The review articles to be published in the journal are authorized by the editor to the relevant authors working on the subject.

General Principles

Papers that have not been published before or under evaluation by other publications are accepted for evaluation by the journal, if approved by each of the author. Publication board may amend manuscripts upon informed consent of authors. Editors and redactors are fully empowered to correct mistakes related to orthography, citation as given in National Library of Medicine MEDLINE/PubMed Resources.

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be sent togather with the manuscript. Please browse BMB recommendations on roles and responsibilities of authors on http://www.icmje.org/recommendations/browse/roles-and-responsibilities/

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Publication Ethics and Publication Malpractice Statement

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Bagcilar Medical Bulletin is committed to upholding the highest standards of publication ethics and observes the following principles of Publication Ethics and Malpractice Statement which is based on the recommendations and guidelines for journal editors developed by the Committee on Publication Ethics (COPE), Council of Science Editors (CSE), World Association of Medical Editors (WAME) and the International Committee of Medical Journal Editors (ICMJE).

All submissions must be original, unpublished (including as full text in conference proceedings), and not under the review of any other publication synchronously. Each manuscript is reviewed by one of the editors and at least two referees under double-blind peer review process. We reserve the right to use plagiarism detecting software to screen submitted papers at all times. We check for plagiary and fraudulent data; falsification (fabrication or manipulation of research data, tables, or images) and improper use of humans or animals in research. All manuscripts not in accordance with these standards will be removed from the publication. This also contains any possible malpractice discovered after the publication. In accordance with the code of conduct we will report any cases of suspected plagiarism or duplicate publishing.

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Biomedical Research-revised in 2006 http://www.wma.net/en/30publications/10policies/a18/

For this reason, regarding the subjects of clinical experiments, it should be indicated in the submitted manuscripts definitely that the above mentioned codes of conduct were applied. Besides approvals, from national or local ethical committees should be sent together with the papers as well. Manuscripts that report the results of experimental investigation with human subjects must include a statement that informed consent was obtained after the procedure(s) had been fully explained. In the case of children and those under wardship or with confirmed insanity, authors are asked to include information about whether the legal custodian's assent was obtained. And a letter of affirmation signed by all authors, confirming the collection of informed consents has to be sent to the journal.

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Language

The language of the Bagcilar Medical Bulletin is American English. In addition, abstracts of the articles are published in both English and Turkish, and abstracts in both languages are requested from the authour(s).

Manuscript Organization And Format

All correspondence will be sent to the first-named author unless otherwise specified. Papers should be accompanied by a cover letter indicating that the paper is intended for publication and specifying for which section of the Journal it is being submitted (i.e., original research article,brief research article, review article, case report or letter to the editor). In addition, a Copyright Transfer Form, Author Contribution Form and ICJME Form for Disclosure of Potential Conflicts of Interest must be submitted. Authors will be notified of the receipt of their paper and the number assigned to it. The number should be included in all further correspondence. All parts of the manuscript, including case reports, quotations, references, and tables, must be double-spaced throughout. All four margins must be at least 2.5 cm. The manuscript should be arranged in the following order, with each item beginning a new page: 1) title page, 2) abstract, 3) text, 4) acknowledgement 5) references, and 6) tables and/or figures. All pages must be numbered consecutively.

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On the title page, include full names of authors, academic or professional affiliations, and complete address with phone, fax number(s) and e-mail address (es) of the corresponding author. Acknowledgments for personal and technical assistance should be indicated on the title page.

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Manuscript Types

Original Research

Original research articles report substantial and original scientific results within the journal scope. Original research articles comprised of Abstract, Key Words, Introduction, Material and Methods, Results, Discussion, Conclusion, References and Table/Figures. The abstract should be structured as the following.

Abstract

The abstract should be no longer than 500 words and structured as follows: objective, method, results, and conclusions. Objective -the primary purpose of the article; Material and Method(s) -data sources, design of the study, patients or participants, interventions, and main outcome measures; Results -key findings; Conclusions -including direct clinical applications.

Key Words

Up to 3-10 key words in English and in Turkish should be in accordance with National Library of Medicine's Medical Subjects Subheadings (MeSH).

Introduction

This section should contain a clear statement of the general and specific objectives as well as the hypotheses which the work is designed to test. It should also give a brief account of the reported literature. The last sentence should clearly state the primary and secondary purposes of the article. Only, the actual references related with the issues have to be indicated and data or findings related with the current study must not be included in this section.

Material and Methods

This section should contain explicit, concise descriptions of all procedures, materials and methods used in the investigation to enable the reader to judge their accuracy, reproducibility, etc. This section should include the known findings at the beginning of the study and the findings during the study must be reported in results section. Ethics Committee Approval of the research and written Informed Consent obtained from the participants should be indicated.

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The election, source of population, inclusion and exclusion criteria of the people who participate to experimental or clinical study must be clearly defined in this section. The particular study sample must be explained by the authors (i.e., why the study is performed in a definite age, race or sex population, etc.)

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The methods, apparatus (the manufacturer's name and address in parentheses), and procedures in sufficient detail must be defined to allow others to reproduce the results. References to established methods, including statistical methods (see below) must be given and brief descriptions for methods that have been published but are not well-known must be provided; new or substantially modified methods must be described, the reasons for using them must be given, and their limitations of the methods must be evaluated. The all drugs and chemicals used, including generic name(s), dose(s), and route(s) of administration must be identified. Authors submitting review manuscripts should include a section describing the methods used for locating, selecting, extracting, and synthesizing data. These methods should also be summarized in the abstract.

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The results should be presented in logical sequence in the text, tables, and illustrations, giving the main or most important findings first. The all the data in the tables or illustrations should not be repeated in the text; only the most important observations must be emphasized or summarized. Extra or supplementary materials and technical detail can be placed in an appendix where they will be accessible but will not interrupt the flow of the text, or they can be published solely in the electronic version of the journal.

Discussion

The findings of the study, the findings and results which support or do not support the hypothesis of the study should

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be discussed, results should be compared and contrasted with findings of other studies in the literature and the different findings from other studies should be explained. The new and important aspects of the study and the conclusions that follow from them should be emphasized. The data or other information given in the Introduction or the Results section should not be repeated in detail.

Conclusions

Conclusions derived from the study should be stated. For experimental studies, it is useful to begin the discussion by summarizing briefly the main findings, then explore possible mechanisms or explanations for these findings, compare and contrast the results with other relevant studies, state the limitations of the study, and explore the implications of the findings for future research and for clinical practice. The conclusions should be linked with the goals of the study but unqualified statements and conclusions not adequately supported by the data should be avoided. New hypotheses should be stated when warranted, but should be labeled clearly as such.

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Tables, graphics and illustrations should be numbered in Arabic numerals in the text. The places of the illustrations should be signed in the text. Detailed information is under the related heading in below.

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Brief researches are similar to original research in that they follow the same format and guidelines, but they consider small-scale research or research that is in early stages of development. These may include preliminary studies that has a simple research design or a small sample size and that have produced limited pilot data and initial findings that indicate need for further investigation. Brief researches are much shorter than manuscripts associated with a more advanced, larger-scale research project. They are not meant to be used for a short version of an article about research that would otherwise qualify for a full original research manuscript or for publishing material on research that lacks significance, is not rigorous or, if expanded, would not qualify for a full article or for research.

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Case reports consider new, interesting and intriguing case studies in detail. They should be unique and present methods to overcome any health challenge by use of novel tools and techniques and provide a learning source for the readers. Case reports comprise of: Abstract (unstructured summary), Key-words, Introduction, Case Report, Discussion, Reference, Tables and Figures. Written informed consent of the patient should be obtained and indicated in the manuscript.

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Review articles are written by individuals who have done substantial work on the subject or are considered experts in the field. The Journal invites authors to write articles describing, evaluating and discussing the current level of knowledge regarding a specific subject in the clinical practice.

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The "Bagcilar Medical Bulletin'' follows the Recommendations for the Conduct, Reporting, Editing, and Publication of Scholarly Work in Medical Journals" (International Committee of Medical Journal Editors - http://www.icmje.org/). Upon submission of the manuscript, authors are to indicate the type of trial/research and provide the checklist of the following guidelines when appropriate:

CONSORT statement for randomized controlled trials (Moher D, Schultz KF, Altman D, for the CONSORT Group. The CONSORT statement revised recommendations for improving the quality of reports of parallel group randomized trials. JAMA 2001; 285: 1987-91) (http://www.consort-statement.org /),

PRISMA for preferred reporting items for systematic reviews and meta-analyses (Moher D, Liberati A, Tetzlaff J, Altman DG, The PRISMA Group. Preferred Reporting Items for Systematic Reviews and Meta-Analyses: The PRISMA Statement. PLoS Med 2009; 6(7): e1000097.) (http://www.prisma-statement.org /),

STARD checklist for the reporting of studies of diagnostic accuracy (Bossuyt PM, Reitsma JB, Bruns DE, Gatsonis CA, Glasziou PP, Irwig LM, et al, for the STARD Group. Towards complete and accurate reporting of studies of diagnostic accuracy: the STARD initiative. Ann Intern Med 2003;138:40-4.) (http://www.stard-statement.org /),

INSTRUCTIONS TO AUTHORS

STROBE statement-checklist of items that should be included in reports of observational studies (http://www.strobe-statement.org /),

MOOSE guidelines for meta-analysis and systemic reviews of observational studies (Stroup DF, Berlin JA, Morton SC, et al. Meta-analysis of observational studies in epidemiology: a proposal for reporting Meta-analysis of observational Studies in Epidemiology (MOOSE) group. JAMA 2000; 283: 2008-12).

CARE guidelines are designed to increase the accuracy, transparency, and usefulness of case reports. (Gagnier JJ, Kienle G, Altman DG, Moher D, Sox H, Riley D; the CARE Group. The CARE Guidelines: Consensus-based Clinical Case Reporting Guideline Development.) (http://www.care-statement.org /

References

Although references to review articles can be an efficient way to guide readers to a body of literature, review articles do not always reflect original work accurately. Readers should therefore be provided with direct references to original research sources whenever possible. On the other hand, extensive lists of references to original work on a topic can use excessive space on the printed page. Small numbers of references to key original papers often serve as well as more exhaustive lists, particularly since references can now be added to the electronic version of published papers, and since electronic literature searching allows readers to retrieve published literature efficiently. Using abstracts as references should be avoided.

References to papers accepted but not yet published should be designated as “in press” or “forthcoming”; authors should obtain written permission to cite such papers as well as verification that they have been accepted for publication. Information from manuscripts submitted but not accepted should be cited in the text as “unpublished observations” with written permission from the source. Citing a “personal communication” should be avoided unless it provides essential information not available from a public source, in which case the name of the person and date of communication should be cited in parentheses in the text. For scientific articles, written permission and confirmation of accuracy from the source of a personal communication must be obtained.

Reference Style and Format

The Uniform Requirements style for references is based largely on an American National Standards Institute style adapted by the National Library of Medicine for its databases. Authors should consult NLM’s Citing Medicine (http://www.nlm.nih.gov/bsd/uniform_requirements.html) for information on its recommended formats for a variety of reference types. References should be numbered consecutively in the order in which they are first mentioned in the text. Identify references in text, tables, and legends by Arabic numerals in parentheses. References cited only in tables or figure legends should be numbered in accordance with the sequence established by the first identification in the text of the particular table or figure. The titles of journals should be abbreviated according to the style used in the list of Journals in National Library of Medicine sources. In addition the list should be obtained in the web address of http://www.nlm.nih.gov. Accuracy of citation is the author’s responsibility. All references should be cited in text. Type references in the style shown below. If there are more than 6 authors, list them followed by et al. Abbreviations of journal names should conform to the style used in National Library of Medicine. If a journal is not indexed in National Library of Medicine’s MEDLINE/PubMed, it should not be abbreviated.

Examples for References:

1. For articles in journals:

For the published article from the journal which placed and abbreviated in MEDLINE:

Crow SJ, Peterson CB, Swanson SA, Raymond NC, Specker S, Eckert ED, et al. Increased mortality in bulimia nervosa and other eating disorders. Am J Psychiatry 2009;166(12):1342-1346.

For the published article from the journal which is not placed and is not abbreviated in MEDLINE:

Sevinçer GM, Konuk N. Emotional eating. Journal of Mood Disorders 2013;3(4):171-178.

2. For the supplement:

For the published article from the journal which placed and abbreviated in MEDLINE:

Sharan P, Sundar AS. Eating disorders in women. Indian J Psychiatry 2015:57(Suppl 2):286-295.

For the published article from the journal which is not placed and is not abbreviated in MEDLINE:

Maner F. Yeme bozukluklarının tedavisi. Anadolu Psikiyatri Dergisi 2009;10(Ek 1):55-56.

3. For articles in press:

Cossrow N, Pawaskar M, Witt EA, Ming EE, Victor TW, Herman BK, et al. Estimating the prevalence of binge eating disorder in a community sample from the United States: comparing DSM-IV-TR and DSM-5 criteria. J Clin Psychiatry, 2016. (in press).

4. For the citations from books:

Books edited by one editor:

McKnight TL. Obesity Management in Family Practice. 1st ed., NewYork: Springer, 2005:47-51.

INSTRUCTIONS TO AUTHORS

For the citation from a section of book edited by editor(s):

Jebb S, Wells J. Measuring body composition in adults and children. In Clinical Obesity in Adults and Children, Copelman P, Caterson I, Dietz W (editors). 1st ed., London: Blackwell Publishing, 2005:12-18.

If the authors of the cited section are the editors of the book:

Eckel RH (editor). Treatment of obesity with drugs in the new millennium. In Obesity Mechanisms and Clinical Management. First ed., Philadelphia: Lippincott Williams & Wilkins, 2003:449-476.

For the citation from a translated book:

McGuffin P, Owen MJ, Gottsman II. Psikiyatri Genetiği ve Genomiği. Abay E, Görgülü Y (Çevirenler) 1st ed., Istanbul: Nobel Tıp Kitabevleri, 2009:303-341.

5. For the citation from thesis:

Keçeli F. Yeme bozukluğu hastalarında obsesif kompulsif bozukluk ve kişilik bozukluğu. Thesis, T.C. Sağlık Bakanlığı Bakırköy Prof. Dr. Mazhar Osman Ruh Sağlığı ve Sinir Hastalıkları Eğitim ve Araştırma Hastanesi, Istanbul:2006.

6. For the citation from posters:

Akbaş Öncel D, Akdemir A. Üniversite öğrencilerinde diyet, beden algısı ve kendilik algısı arasındaki ilişkiler. 47. Ulusal Psikiyatri Kongresi Özet Kitabı, 26-30 Ekim 2011, Antalya, 2011:102.

7. Online Article:

Kaul S, Diamond GA. Good enough: a primer on the analysis and interpretation of noninferiority trials. Ann Intern Med [Internet]. 2006 Jul 4 [cited 2007 Jan 4];145(1):62-9. Available from:http://www.annals.org/cgi/reprint/145/1/62.pdf

SUBMISSION TO JOURNAL

All new manuscripts must be submitted through the Bagcilar Medical Bulletin online manuscript submission and peer review system. Complete instructions are available at the website (). A cover letter should accompany with manuscripts, including the knowledge of:

•The findings of previous same studies should be informed and should be cited. The copies of previous same studies should be sent with manuscripts that might help to the editor in the decision process.

•The knowledge of "all authors have read and accepted the study in its form, all authors meet the criteria for being in authorship" should be stated.

•All helpful things for editorial ship should be stated: The comments of previous editor/reviewers and the response of authors should be added if the manuscript has been sent to another journal for consideration, previously. The editor requested this information to accelerate the publication process.

SUBMISSION CHECKLIST

It is hoped that this list will be useful during the final checking of an article prior to sending it to the journal's editor for review. Please consult this Guide for Authors, for further details of any item.

Ensure that the following items are present:

- Cover letter to the editor
  - The category of the manuscript
  - Acknowledgement of "the paper is not under consideration for publication in another journal"
  - Disclosure of any commercial or financial involvement
  - Reviewing the statistical design of the research article
  - Last control for fluent English
- Copyright Transfer Form
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- Permission of previous published material if used in the present manuscript
- Acknowledgement of the study "in accordance with the ethical standards of the responsible committee on human experimentation (institutional and national) and with the Helsinki Declaration of in 2000.
- Statement that informed consent was obtained after the procedure(s) had been fully explained.
- Indicating whether the institutional and national guide for the care and use of laboratory animals was followed as in "Guide for the Care and Use of Laboratory Animals".
- Title page
  - The title of the manuscript both in Turkish and in English
  - All authors and their affiliations
  - All authors' e-mail address, full postal address, GSM phone, business telephone and fax numbers
- Abstracts (400-500 words) Both in Turkish and in English
- Key words: 3 to 10 words (in Turkish and in English)
- Body text
- Acknowledgement
- Reference
- All tables (including title, description, footnotes)

YAZARLARA BİLGİ

Derginin Tanımı

Bağcılar Tıp Bülteni (Bagcilar Medical Bulletin), tıbbın her alanında araştırma makalelerini, güncel derleme yazılarını, olgu sunumlarını ve editöre mektupları İngilizce tam metin ve Türkçe özle yayınlayan hakemli bir dergidir. Dergi online olarak yılda 4 sayı yayınlanmaktadır. Tüm makaleler kabul edilir edilmez, online olarak pdf formatında bu web sitesinde, o dönemdeki sayının bir makalesi olarak yer alacaktır. Dergi Galenos Yayınevi tarafından yayımlanmaktadır.

Editoryal Politikalar ve Hakem Süreci

Yayın Politikası

Bağcılar Tıp Bülteni, yayınlanmak üzere gönderilen yazıları aşağıda belirtilen şekillerde kabul eder:

- Orijinal araştırmalar,
- Kısa araştırmalar,
- Olgu sunumları,
- Derlemeler,
- Editöre mektup

Dergi, Türkiye'de yapılan araştırmaların uluslararası bilim arenasına duyurulması, uluslararası bilim çevrelerince paylaşılması ve bu bağlamda Türkiye'nin tanıtılmasına katkıda bulunmayı misyon edindiğinden özellikle orijinal araştırma niteliğindeki yazıları yayınlamaya öncelik vermektedir. Dergide yayınlanacak derleme türündeki yazılar editör tarafından konu ile ilgili çalışan yetkin kişilere hazırlatılmaktadır.

Genel İlkeler

Daha önce yayınlanmamış ya da yayınlanmak üzere başka bir dergide halen değerlendirmede olmayan ve her bir yazar tarafından onaylanan makaleler dergide değerlendirilmek üzere kabul edilir. Yayın kurulu, yazarların iznini alarak yazıda değişiklikler yapabilir. Editör ve dil editörleri dil, imlâ ve kaynakların National Library of Medicine MEDLINE/PubMed Resources'da belirtildiği gibi yazılmasında ve ilgili konularda tam yetkilidir.

Eğer makalede daha önce yayınlanmış alıntı yazı, tablo, resim vs. mevcut ise makale yazarı, yayın hakkı sahibi ve yazarlarından yazılı izin almak ve bunu makalede belirtmek zorundadır. Gerekli izinlerin alınıp alınmadığından yazar(lar) sorumludur.

Bilimsel toplantılarda sunulan özet bildiriler, makalede belirtilmesi koşulu ile kaynak olarak kabul edilir. Editör, dergiye gönderilen makale biçimsel esaslara uygun ise, gelen yazıyı yurtiçinden ve/veya yurtdışından en az iki hakemin değerlendirmesinden geçirtir, hakemler gerek gördüğü takdirde yazıda istenen değişiklikler yazarlar tarafından yapıldıktan sonra yayınlanmasına onay verir. Makale yayınlanmak üzere dergiye gönderildikten sonra yazarlardan hiçbirinin ismi, tüm yazarların yazılı izni olmadan yazar listesinden silinemez ve yeni bir isim yazar olarak eklenemez ve yazar sırası değiştirilemez. Yayına kabul edilmeyen makale, resim ve fotoğraflar yazarlara geri gönderilmez.

Yazarların Sorumluluğu

Makalelerin bilimsel ve etik kurallara uygunluğu yazarların sorumluluğundadır. Yazar makalenin orijinal olduğu, daha önce başka bir yerde yayınlanmadığı ve başka bir yerde, başka bir dilde yayınlanmak üzere değerlendirmede olmadığı konusunda teminat sağlamalıdır. Uygulamadaki telif kanunları ve anlaşmaları gözetilmelidir. Telife bağlı materyaller (örneğin tablolar, şekiller veya büyük alıntılar) gerekli izin ve teşekkürle kullanılmalıdır. Başka yazarların, katkıda bulunanların çalışmaları ya da yararlanılan kaynaklar uygun biçimde kullanılmalı ve referanslarda belirtilmelidir.

Gönderilen makalede tüm yazarların akademik ve bilimsel olarak doğrudan katkısı olmalıdır, bu bağlamda "yazar" yayınlanan bir araştırmanın kavramsallaştırılmasına ve desenine, verilerin elde edilmesine, analizine ya da yorumlanmasına belirgin katkı yapan; yazının yazılması ya da bunun içerik açısından eleştirel biçimde gözden geçirilmesinde görev yapan; yazının yayınlanmak üzere nihai halini onaylayan ve çalışmanın herhangi bir bölümünün doğruluğuna ya da bütünlüğüne ilişkin soruların uygun şekilde soruşturulduğunun ve çözümlendiğinin garantisini vermek amacıyla çalışmanın her yönünden sorumlu olmayı kabul eden kişi olarak görülür. Fon sağlanması, ya da araştırma grubunun genel süpervizyonu tek başına yazarlık hakkı kazandırmaz. Yazar olarak gösterilen tüm bireyler sayılan tüm ölçütleri karşılamalıdır ve yukarıdaki ölçütleri karşılayan her birey yazar olarak gösterilebilir. Çok merkezli çalışmalarda grubun tüm üyelerinin yukarıda belirtilen şartları karşılaması gereklidir. Yazarların isim sıralaması ortak verilen bir karar olmalıdır. Tüm yazarlar yazar sıralamasını Telif Hakkı Devir Formunda imzalı olarak belirtmek zorundadırlar. Yazarların tümünün ismi yazının başlığının altındaki bölümde yer almalıdır.

Yazarlık için yeterli ölçütleri karşılamayan ancak çalışmaya katkısı olan tüm bireyler teşekkür (acknowledgement) kısmında sıralanmalıdır. Bunlara örnek olarak ise sadece teknik destek sağlayan, yazıma yardımcı olan ya da sadece genel bir destek sağlayan kişiler verilebilir. Finansal ve materyal destekleri de belirtilmelidir.

Yazıya materyal olarak destek veren ancak yazarlık için gerekli ölçütleri karşılamayan kişiler "klinik araştırıcılar" ya da "yardımcı araştırıcılar" gibi başlıklar altında toplanmalı ve bunların işlevleri ya da katılımları "bilimsel danışmanlık yaptı", "çalışma önerisini gözden geçirdi", "veri topladı" ya da "çalışma hastalarının bakımını üstlendi" şeklinde belirtilmelidir.

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Teşekkür (acknowledgement) kısmında belirtilen bu ifadeler için bu bireylerden de yazılı izin alınması gerekmektedir.

Bütün yazarlar, araştırmanın sonuçlarını ya da bilimsel değerlendirmeyi etkileyebilme potansiyeli olan finansal ilişkiler, çıkar çatışması ve çıkar rekabetini beyan etmelidirler. Bir yazar kendi yayınlanmış yazısında belirgin bir hata ya da yanlışlık tespit ederse, bu yanlışlıklara ilişkin düzeltme ya da geri çekme için yayın yönetmeni ile hemen temasa geçme ve işbirliği yapma sorumluluğunu taşır. Yazarların katkısını belirten Yazar Katkı Formu ve çıkar çatışması olup olmadığını belirten ICMJE Potansiyel Çıkar Çatışması Beyan Formu makale ile birlikte gönderilmelidir. Yazarların görevleri ve sorumlulukları konusunda aşağıdaki kaynağa bakabilirsiniz; http://www.icmje.org/recommendations/browse/roles-and-responsibilities/

Editör ve Hakem Sorumlulukları ve Değerlendirme Süreci

Editörler, makaleleri, yazarların etnik kökeninden, cinsiyetinden, cinsel yöneliminden, uyruğundan, dini inancından ve siyasi felsefesinden bağımsız olarak değerlendirirler. Yayına gönderilen makalelerin adil bir şekilde çift taraflı kör hakem değerlendirmesinden geçmelerini sağlarlar. Gönderilen makalelere ilişkin tüm bilginin, makale yayınlanana kadar gizli kalacağını garanti ederler. Editörler içerik ve yayının toplam kalitesinden sorumludurlar. Gereğinde hata sayfası yayınlamalı ya da düzeltme yapmalıdırlar.

Genel Yayın Yönetmeni; yazarlar, editörler ve hakemler arasında çıkar çatışmasına izin vermez. Hakem atama konusunda tam yetkiye sahiptir ve Bağcılar Tıp Bülteni'nde yayınlanacak makalelerle ilgili nihai kararı vermekle yükümlüdür. Yayın etiği konusunda COPE kaynağına bakabilirsiniz. https://publicationethics.org/files/u7141/1999pdf13.pdf

Hakemler makaleleri, yazarların etnik kökeninden, cinsiyetinden, cinsel yöneliminden, uyruğundan, dini inancından ve siyasi felsefesinden bağımsız olarak değerlendirirler. Araştırmayla ilgili, yazarlarla ve/veya araştırmanın finansal destekçileriyle çıkar çatışmaları olmamalıdır. Değerlendirmelerinin sonucunda tarafsız bir yargıya varmalıdırlar. Hakemler yazarların atıfta bulunmadığı konuyla ilgili yayınlanmış çalışmaları tespit etmelidirler. Gönderilmiş yazılara ilişkin tüm bilginin gizli tutulmasını sağlamalı ve yazar tarafında herhangi bir telif hakkı ihlali ve intihal fark ederlerse Genel Yayın Yönetmeni'ne raporlamalıdırlar. Hakem, makale konusu hakkında kendini vasıflı hissetmiyor ya da zamanında geri dönüş sağlaması mümkün görünmüyorsa, Genel Yayın Yönetmeni'ne bu durumu bildirmeli ve hakem sürecine kendisini dahil etmemesini istemelidir.

Editör makalelerle ilgili bilgileri (makalenin alınması, içeriği, gözden geçirme sürecinin durumu, hakemlerin eleştirileri ya da varılan sonuç) yazarlar ya da hakemler dışında kimseyle paylaşmaz.

Değerlendirme sürecinde editör hakemlere gözden geçirme için gönderilen makalelerin, yazarların özel mülkü olduğunu ve bunun imtiyazlı bir iletişim olduğunu açıkça belirtir. Hakemler ve yayın kurulu üyeleri topluma açık bir şekilde makaleleri tartışamazlar. Hakemlerin kendileri için makalelerin kopyalarını çıkarmalarına izin verilmez ve editörün izni olmadan makaleleri başkasına veremezler. Hakemler gözden geçirmelerini bitirdikten sonra makalenin kopyalarını yok etmeli ya da editöre göndermelidirler. Dergimiz editörü de reddedilen ya da geri verilen makalelerin kopyalarını imha etmelidir.

Yazarın ve editörün izni olmadan hakemlerin gözden geçirmeleri basılamaz ve açıklanamaz. Hakemlerin kimliğinin gizli kalmasına özen gösterilmelidir. Bazı durumlarda editörün kararıyla, ilgili hakemlerin makaleye ait yorumları aynı makaleyi yorumlayan diğer hakemlere gönderilerek hakemlerin bu süreçte aydınlatılması sağlanabilir. Değerlendirme süreciyle ilgili olarak COPE kaynağına bakabilirsiniz: http://publicationethics.org/files/Peer review guidelines.pdf

Açık Erişim İlkesi

Açık erişimli bir yayın olan Bağcılar Tıp Bülteni dergisinin tüm içeriği okura ya da okurun dahil olduğu kuruma ücretsiz olarak sunulur. Okurlar, yayıncı ya da yazardan izin almadan dergi makalelerinin tam metnini okuyabilir, indirebilir, kopyalayabilir, dağıtabilir, basabilir, arayabilir ve link sağlayabilir.

Yayın Etiği

İlke ve Standartlar

Bağcılar Tıp Bülteni yayın etiğinde en yüksek standartlara bağlıdır ve Committee on Publication Ethics (COPE), Council of Science Editors (CSE), World Association of Medical Editors (WAME) ve International Committee of Medical Journals (ICJME) tarafından geliştirilen yayın etiği ilkelerini ve tavsiyelerini gözetir.

Gönderilen tüm makaleler orijinal, yayınlanmamış (konferans bildirilerindeki tam metinler de dahil) ve başka bir dergide değerlendirme sürecinde olmamalıdır. Her bir makale editörlerden biri ve en az iki hakem tarafından çift kör değerlendirmeden geçirilir. Gönderilen makaleleri intihal yazılımı ile denetleme hakkımız haklıdır. İntihal, veride hile ve tahrif (araştırma verisi, tabloları ya da imajlarının manipülasyonu ve asılsız üretimi), insan ve hayvanların araştırmada uygun olmayan kullanımı konuları denetimden

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geçmektedir. Bu standartlara uygun olmayan tüm makaleler yayından çıkarılır. Buna yayından sonra tespit edilen olası kuraldışı, uygunsuzluklar içeren makaleler de dahildir. Yayın etiği kurallarına bağlı olarak, intihal şüphesini ve duplikasyon durumlarını rapor edeceğimizi belirtiriz. Olası bilimsel hatalı davranışları ve yayın etiği ihlali vakalarını ele alırken COPE Ethics Flowcharts http://publicationethics.org/resources/flowcharts izlenir.

İnsan ve Hayvan Hakları, Bilgilendirilmiş Olur, Çıkar Çatışması

Bağcılar Tıp Bülteni, yayınladığı makalelerin ticarî kaygılardan uzak ve konu ile ilgili en iyi etik ve bilimsel standartlarda olması şartını gözetmektedir. Makalelerin etik kurallara uygunluğu yazarların sorumluluğundadır.

Bağcılar Tıp Bülteni, 1975 Helsinki Deklarasyonu'nun 2004 yılında revize edilen Ethical Principles for Medical Research Involving Human Subjects'e http://www.wma.net/en/30publications/10policies/b3/index.html ve 2006 yılında revize edilen WMA Statement on Animal Use in Biomedical Research'e http://www.wma.net/en/30publications/10policies/a18/uymayı prensip edinmiştir. Bu yüzden dergide yayınlanmak üzere gönderilen yazılarda, klinik deneylere katılan denekler ile ilgili olarak yukarıda belirtilen etik standartlara uyulduğunun mutlaka belirtilmesi gerekmektedir. Ayrıca deneyin türüne göre gerekli olan yerel veya ulusal etik komitelerden alınan onay yazıları yazı ile birlikte gönderilmelidir. Bununla birlikte deneye katılan kişi/hastalardan, hastalar eğer temyiz kudretine sahip değilse vâsilerinden yazılı bilgilendirilmiş onam alındığını belirten bir yazı ile beraber tüm yazarlar tarafından imzalanmış bir belgenin editöre gönderilmesi gerekmektedir.

Hastalardan izin alınmadan mahremiyet bozulamaz. Hastaların ismi, isimlerinin baş harfleri ya da hastane numaraları gibi tanımlayıcı bilgiler, fotoğraflar ve soy ağacı bilgileri vb. bilimsel amaçlar açısından çok gerekli olmadıkça ve hasta (ya da anne-baba, ya da vâsisi) yazılı bilgilendirilmiş onam vermedikçe basılmazlar. Özellikle olgu bildirimlerinde, çok gerekli olmadıkça hasta ile ilgili tanımlayıcı ayrıntılar çıkarılmalıdır. Örneğin, fotoğraflarda göz bölgesinin maskelenmesi kimliğin gizlenmesi için yeterli değildir. Eğer veriler kimliğin gizlenmesi için değiştirildiyse yazarlar bu değişikliklerin bilimsel anlamı etkilemediği konusunda güvence vermelidirler. Olgu sunumlarında yer verilen hastalardan bilgilendirilmiş onam alınmalıdır. Bilgilendirilmiş onam alındığı da makalede belirtilmelidir.

Bu tip çalışmaların varlığında yazarlar, makalenin YÖNTEM(LER) bölümünde bu prensiplere uygun olarak çalışmayı yaptıklarını, kurumlarının etik kurullarından ve çalışmaya katılmış insanlardan "bilgilendirilmiş onam" aldıklarını belirtmek zorundadırlar.

Çalışmada "hayvan" kullanılmış ise yazarlar, makalenin YÖNTEM(LER) bölümünde "Guide for the Care and Use of Laboratory Animals" (www.nap.edu/catalog/5140.html) doğrultusunda çalışmalarında hayvan haklarını koruduklarını ve kurumlarının etik kurullarından onay aldıklarını belirtmek zorundadırlar. Hayvan deneyleri rapor edilirken yazarlar, laboratuvar hayvanlarının bakımı ve kullanımı ile ilgili kurumsal ve ulusal rehberlere uyup uymadıklarını yazılı olarak bildirmek zorundadırlar.

Editör ve yayıncı, reklâm amacı ile dergide yayınlanan ticari ürünlerin özellikleri ve açıklamaları konusunda hiçbir garanti vermemekte ve sorumluluk kabul etmemektedir. Eğer makalede doğrudan veya dolaylı ticarî bağlantı veya çalışma için maddî destek veren kurum mevcut ise yazarlar; kaynak sayfasında, kullanılan ticarî ürün, ilaç, ilaç firması v.b. ile ticari hiçbir ilişkisinin olmadığını veya varsa nasıl bir ilişkisinin olduğunu (konsültan, diğer anlaşmalar) bildirmek zorundadır. Bağcılar Tıp Bülteni, WAME'nin çıkar çatışması tanımını benimser http://www.wame.org/about/wame-editorial-on-coi

Buna göre, yazar, hakem ya da editör sorumluluklarını aşırı düzeyde ve/veya haksızlığa yol açabilecek düzeyde etkileyebilecek ya da etkileyebileceği olası bir çıkar rekabeti içindeyse, çıkar çatışması söz konusudur ve bunun açıklanması gerekir. Açıklanması öngörülen çıkar çatışması tipleri, finansal bağlar, akademik taahhütler, kişisel ilişkiler, politik ya da dini inançlar, kurumsal bağlantılardır. Çıkar çatışması söz konusuysa bu makalede açıklanmalıdır.

Dil

Bağcılar Tıp Bülteni'nin yayın dili Amerikan İngilizcesi'dir, ayrıca makalelerin özleri hem İngilizce, hem Türkçe yayınlanır. Her iki dildeki özler yazarlardan istenir.

Yazıların Hazırlanması

Aksi belirtilmedikçe gönderilen yazılarla ilgili tüm yazışmalar ilk yazarla yapılacaktır. Gönderilen yazılar, yazının yayınlanmak üzere gönderildiğini ve Bağcılar Tıp Bülteni'nin hangi bölümü (Orijinal Araştırma, Kısa Araştırma, Olgu Sunumu, Derleme, Editöre Mektup) için başvurulduğunu belirten bir mektup, yazının elektronik formunu içeren Microsoft Word 2003 ve üzerindeki versiyonları ile yazılmış elektronik dosya ile tüm yazarların imzaladığı 'Telif Hakkı Devir Formu', Yazar Katkı Formu ve ICMJE Potansiyel Çıkar Çatışması Beyan Formueklenerek gönderilmelidir. Yazıların alınmasının ardından yazarlara makalenin alındığı, bir makale numarası ile bildirilecektir. Tüm yazışmalarda bu makale numarası kullanılacaktır. Makaleler sayfanın her bir kenarından 2,5

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cm kenar boşluğu bırakılarak ve çift satır aralıklı yazılmalıdır. Makalelerde aşağıdaki sıra takip edilmelidir ve her bölüm yeni bir sayfa ile başlamalıdır: 1) başlık sayfası, 2) öz, 3) metin, 4) teşekkür / 5) kaynaklar ve 6) tablo ve/veya şekiller. Tüm sayfalar sırayla numaralandırılmalıdır.

Başlık

Başlık sayfasında, yazarların adları, akademik ünvanları ve yazışılacak yazarın tam adres, telefon ve faks numaraları ile e-mail adresi mutlaka bulunmalıdır. Yazıların Türkçe özlerinde mutlaka Türkçe başlık da yer almalıdır.

Öz ve Anahtar Sözcükler

Makalenin İngilizce başlığı İngilizce özde, Türkçe başlığı da Türkçe özde yer almalıdır. Bütün makaleler öz ve anahtar kelime içermelidir. Özler bir makalenin birçok elektronik veri tabanında yer alan en belirgin kısmı olduğundan, yazarlar özün makalenin içeriğini doğru olarak yansıttığından emin olmalıdır. Öz çalışmanın temeliyle ilgili bilgi vermeli ve çalışmanın amacını, temel prosedürleri (olguların ya da laboratuvar hayvanlarının seçimi, gözlemsel ve analitik yöntemler), ana bulguları (mümkünse özgül etki büyüklüklerini ve istatistiksel anlamlılıklarını vererek) ve temel çıkarımları içermelidir. Çalışmanın ya da gözlemlerin yeni ve önemli yönleri belirtilmelidir. Anahtar sözcükler, her türlü yazıda Türkçe ve İngilizce özlerin altındaki sayfada 3-10 adet verilmelidir. Anahtar sözcük olarak National Library of Medicine'ın Tıbbi Konu Başlıkları'nda (Medical Subject Headings, MeSH) yer alan terimler kullanılmalıdır. MeSH'de yer alan terimlerin Türkçe karşılıklarına Türkiye Bilim Terimleri'nden http://www.bilimterimleri.com erişilebilir.

Makale Türleri

Orijinal Araştırma

Orijinal araştırma makaleleri derginin kapsamına uygun konularda önemli, özgün bilimsel sonuçlar sunan araştırmaları raporlayan yazılardır. Orijinal araştırma makaleleri, Öz, Anahtar Kelimeler, Giriş, Yöntem ve Gereçler, Bulgular, Tartışma, Sonuçlar, Kaynaklar bölümlerinden ve Tablo, Grafik ve Şekillerden oluşur. Öz bölümü araştırma yazılarında aşağıda belirtilen formatta yapılandırılmış olmalıdır.

Öz

Araştırma yazılarında Türkçe ve İngilizce özler en fazla 500 kelime olmalı ve şu şekilde yapılandırılmalıdır: Amaç/Objective: Yazının birincil ve asıl amacı; Yöntem ve Gereçler/Material and Method(s): Veri kaynakları, çalışmanın iskeleti, hastalar ya da çalışmaya katılanlar, görüşme/değerlendirmeler ve temel ölçümler; Bulgular/Results: Ana bulgular; Sonuç(lar)/Conclusion(s):Doğrudan klinik uygulamalar, çıkartılacak sonuçlar belirtilmelidir.

Anahtar Kelimeler

National Library of Medicine'ın Tıbbi Konu Başlıkları'nda (MedicalSubjectHeadings, MeSH) yer alan terimler kullanılmalıdır, en az üç anahtar kelime belirtilmelidir.

Giriş

Giriş/Introduction bölümünde konunun önemi, tarihçe ve bugüne kadar yapılmış çalışmalar, hipotez ve çalışmanın amacından söz edilmelidir. Hem ana hem de ikincil amaçlar açıkça belirtilmelidir. Sadece gerçekten ilişkili kaynaklar gösterilmeli ve çalışmaya ait veri ya da sonuçlardan söz edilmemelidir.

Yöntem ve Gereçler

Yöntem ve Gereçler/Material and Methods bölümünde, veri kaynakları, hastalar ya da çalışmaya katılanlar, ölçekler, görüşme/değerlendirmeler ve temel ölçümler, yapılan işlemler ve istatistiksel yöntemler yer almalıdır. Yöntem bölümü, sadece çalışmanın planı ya da protokolü yazılırken bilinen bilgileri içermelidir; çalışma sırasında elde edilen tüm bilgiler bulgular kısmında verilmelidir. Yöntem ve Gereçler bölümünde olguların seçimi ve tanımlanması hakkında bilgi, teknik bilgi ve istatistik hakkında bilgi yer almalıdır. Araştırmanın Etik Kurul Onayı ve katılımcılardan alınan yazılı Bilgilendirilmiş Onam belirtilmelidir.

Olguların Seçimi ve Tanımlanması

Gözlemsel ya da deneysel çalışmaya katılanların (hastalar, hayvanlar, kontroller) seçimi, kaynak popülasyon, çalışmaya alınma ve çalışmadan dışlanma ölçütleri açıkça tanımlanmalıdır. Yaş ve cinsiyet gibi değişkenlerin çalışmanın amacıyla olan ilişkisi her zaman açık olmadığından yazarlar çalışma raporundaki kullanımlarını açıklamalıdır; örneğin yazarlar niçin sadece belli bir yaş grubunun alındığını ya da neden kadınların çalışma dışında bırakıldığını açıklamalıdır. Çalışmanın niçin ve nasıl belli bir şekilde yapıldığı açık bir şekilde belirtilmelidir. Yazarlar etnisite ya da ırk gibi değişkenler kullandıklarında bu değişkenleri nasıl ölçtüklerini ve geçerliklerini açıklamalıdır.

Teknik Bilgi

Diğer çalışmacıların sonuçları yineleyebilmesi için yöntem ve kullanılan araçlar (üretici firma ve adres paragraf içinde belirtilerek) ayrıntılı bir şekilde belirtilmelidir. Önceden kullanılan bilinen yöntemler için (istatistiksel yöntemler dahildir) kaynak gösterilmeli, basılmış ama iyi bilinmeyen bir yöntem için kaynak verilmeli ve yöntem açıklanmalıdır. Aynı şekilde yeni ya da belirgin olarak modifiye edilmiş yöntemler tanımlanmalı ve kullanılma nedenleri belirtilip kısıtlılıkları değerlendirilmelidir. Kullanılan tüm ilaç ve kimyasallar doğru olarak tanımlanıp jenerik isimleri, dozları ve kullanım biçimleri

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belirtilmelidir. Gözden geçirme yazısı gönderen yazarlar veriyi bulma, seçme, ayırma ve sentezleme yöntemlerini belirtmelidir. Bu yöntemler aynı zamanda özde de yer almalıdır.

İstatistik

İstatistiksel yöntem, orijinal veriye erişebilecek bilgili bir okuyucunun rapor edilen sonuçları onaylayabileceği bir ayrıntıda belirtilmelidir. Mümkünse, bulgular niceliksel hale getirilmeli ve hata ölçümleri (güvenlik aralıkları gibi) sunulmalıdır. Etki büyüklüğünü vermeyen, p değerlerinin kullanımı gibi, salt istatistiksel hipotez sınamasına dayanılmamalıdır. Çalışma deseni ve istatistiksel yönteme dair kaynaklar sayfalar belirtilerek mümkün olduğu sürece standart kaynaklar olmalıdır. İstatistiksel terimler, kısaltmalar ve semboller tanımlanmalıdır. Kullanılan bilgisayar programı belirtilmelidir.

Bulgular

Ana bulgular istatistiksel verilerle desteklenmiş olarak eksiksiz verilmeli ve bu bulgular uygun tablo, grafik ve şekillerle görsel olarak da belirtilmelidir. Bulgular yazıda, tablolarda ve şekillerde mantıklı bir sırayla önce en önemli sonuçlar olacak şekilde verilmelidir. Tablo ve şekillerdeki tüm veriyi yazıda vermemeli, sadece önemli noktaları vurgulanmalıdır. Ekstra materyal ve teknik bilgi ek kısmında verilerek yazının akışının bozulmaması sağlanmalı, alternatif olarak bunlar sadece elektronik versiyonda yer almalıdır.

Tartışma

Tartışma/Discussion bölümünde o çalışmadan elde edilen veriler, kurulan hipotez doğrultusunda hipotezi destekleyen ve desteklemeyen bulgular ve sonuçlar irdelenmeli ve bu bulgu ve sonuçlar literatürde bulunan benzeri çalışmalarla kıyaslanmalı, farklılıklar varsa açıklanmalıdır. Çalışmanın yeni ve önemli yanları ve bunlardan çıkan sonuçları vurgulanmalıdır. Giriş ya da sonuçlar kısmında verilen bilgi ve veriler tekrarlanmamalıdır.

Sonuçlar

Sonuçlar/Conclusions bölümünde çalışmadan çıkarılan sonuçlar sıralanmalıdır. Deneysel çalışmalar için tartışmaya sonuçları kısaca özetleyerek başlamak, daha sonra olası mekanizmaları ya da açıklamaları incelemek ve bulguları önceki çalışmalarla karşılaştırmak, çalışmanın kısıtlılıklarını özetlemek, gelecekteki çalışmalar ve klinik pratik için uygulamalarını belirtmek faydalıdır. Varılan sonuçlar çalışmanın amacıyla karşılaştırılmalı, ancak elde edilen bulgular tarafından yeterince desteklenmeyen çıkarımlardan kaçınılmalıdır. Yazarlar, eğer elde ettikleri veriler ekonomik veri ve analizler içermiyorsa, ekonomik çıkar ya da faydalarla ilgili yorumlardan özellikle kaçınılmalıdır. Gerektiğinde yeni hipotezler ortaya konmalı, ancak bunların yeni hipotezler olduğu belirtilmelidir.

Tablo, Grafik ve Şekiller

Yazı içindeki grafik, şekil ve tablolar Arap sayıları ile numaralandırılmalıdır. Şekillerin metin içindeki yerleri belirtilmelidir. Ayrıntılı bilgi aşağıda ilgili başlık altında yer almaktadır.

Kısa Araştırma

Kısa Araştırma makaleleri tarz ve format açısından Orijinal Araştırma makaleleri gibidir; ancak daha küçük ölçekli araştırmaları ya da geliştirme çalışmasının erken aşamalarında olan araştırmaları ele alır. Basit araştırma tasarımı kullanan ön çalışmalar, sınırlı pilot veri sağlayan küçük örnek kitle ile yapılan çalışmalar, ileri araştırma gereksinimine işaret eden başlangıç bulguları bu tür araştırmalar kapsamında sayılabilir. Kısa Araştırma makaleleri, büyük ölçekli gelişkin araştırma projelerini konu alan Orijinal Araştırma makalelerinden daha kısadır. Ancak Kısa Araştırma, Orijinal Araştırma makalesi olabilecek kalitede bir araştırma makalesinin kısa versiyonu olarak anlaşılmamalıdır; önem derecesi düşük, titizlikle yapılmamış bir araştırma hakkında bir yayın malzemesi hazırlamak için kullanılmamalıdır ya da genişletildiğinde Orijinal Araştırma makalesi ya da araştırma niteliği kazanmayacak bir içeriği değerlendirecek bir makale türü olarak anlaşılmamalıdır.

Olgu Sunumu

Olgu sunumu makaleleri özgün vakaları rapor eden yazılardır. Derginin kapsamına giren konulara ilişkin bir problemin üstesinden gelen tedaviyle ilgili, yeni araçlar, teknikler ve metotlar göstererek okuyucular için bilgilendirme sağlamalıdır. Olgu sunumu yazıları Öz (özün araştırma makalesinde olduğu gibi belli bir formatta yapılandırılmış olması gerekmiyor), Anahtar Kelimeler, Giriş, Olgu Sunumu, Tartışma, Referanslar, gerekirse Tablo ve açıklayıcı bilgilerden oluşur. Olgu sunumunda yazılı bilgilendirilmiş onam alınmalı ve makalede belirtilmelidir.

Derleme

Derleme makaleleri alanında zengin birikime ve atıf alan çalışmalara sahip uzman kişilerce yazılan yazılardır. Klinik pratiğe ilişkin bir konuda mevcut bilgiyi tanımlayan, değerlendiren ve tartışan; geleceğe ilişkin çalışmalara yol gösteren derleme yazıları yazmaları için dergi belirlediği yazarlara davet gönderir. Derleme makaleleri, Öz (özün, araştırma makalesinde olduğu gibi belli bir formatta yapılandırılmış olması gerekmiyor), Anahtar Kelimeler, Giriş, Sonuç bölümlerinden oluşur. Derleme makale gönderen yazarların, makalede kullandıkları verinin seçimi, alınması, sentezi için kullandıkları yöntemleri tanımlayan bir bölüme de makalede yer vermeleri gerekir. Bu yöntemler Öz bölümünde de belirtilmelidir.

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Editöre Mektup

Editöre Mektup, kısa ve net görüş bildiren yazılardır. Dergide daha önce yayınlanmış olan makalelerle ilgili olarak ya da dergide ifade edilmiş görüşlerle ilgili olarak yazılmış olması tercih edilir. Editöre Mektup yazıları, daha sonra yeni bir yazı ile geçerlilik ispatı gerektirebilecek ön görüş bildiren yazılar olmamalıdır.

Tablolar

Tablolar bilgileri etkin bir şekilde gösterir ve ayrıca bilginin istenen tüm ayrıntı seviyelerinde verilmesini sağlar. Bilgileri metin yerine tablolarda vermek genelde metnin uzunluğunu kısaltır.

Her tablo ayrı bir sayfaya çift aralıklı olarak basılmalıdır. Tablolar metindeki sıralarına göre numaralanıp, her birine kısa bir başlık verilmelidir. MS Word 2003 ve üstü versiyonlarında otomatik tablo seçeneğinde "tablo klasik 1" ya da "tablo basit 1" seçeneklerine göre tablolar hazırlanmalıdır. Başlık satırı ve tablo alt üst satırları dışında tablonun içinde başka dikey ve yatay çizgiler kullanılmamalıdır. Her sütuna bir başlık verilmelidir. Yazarlar açıklamaları başlıkta değil, dipnotlarda yapmalıdır. Dipnotlarda standart olmayan tüm kısaltmalar açıklanmalıdır. Dipnotlar için sırasıyla şu semboller kullanılmalıdır: (*,†,‡,§,ǁ,¶,**,††,‡‡).

Varyasyonun standart sapma ya da standart hata gibi istatistiksel ölçümleri belirtilmelidir. Metin içinde her tabloya atıfta bulunulduğuna emin olunmalıdır. Eğer yayınlanmış ya da yayınlanmamış herhangi başka bir kaynaktan veri kullanılıyorsa izin alınmalı ve onlar tam olarak bilgilendirilmelidir. Çok fazla veri içeren tablolar, çok yer tutar ve sadece elektronik yayınlar için uygun olabilir ya da okuyuculara yazarlar tarafından doğrudan sağlanabilir. Böyle bir durumda uygun bir ifade metne eklenmelidir. Bu tip tablolar, hakem değerlendirmesinden geçmesi için makaleyle beraber gönderilmelidir.

Şekiller

Şekiller ya profesyonel olarak çizilmeli ve fotoğraflanmalı ya da fotoğraf kalitesinde dijital olarak gönderilmelidir. Şekillerin basıma uygun versiyonlarının yanı sıra JPEG ya da GIF gibi elektronik versiyonlarda yüksek çözünürlükte görüntü oluşturacak biçimlerde elektronik dosyaları gönderilmeli ve yazarlar göndermeden önce bu dosyaların görüntü kalitelerini bilgisayar ekranında kontrol etmelidir.

Röntgen, CT, MRI filmleri ve diğer tanısal görüntülemeler yüksek kalitede basılmış olarak gönderilmelidir. Bu nedenle şekillerin üzerindeki harfler, sayılar ve semboller açık ve tüm makalede eşit ve yayın için küçültüldüklerinde bile okunabilecek boyutlarda olmalıdır. Şekiller mümkün olduğunca tek başlarına anlaşılabilir olmalıdır. Fotomikrografik patoloji preparatları iç ölçekler içermelidir. Semboller, oklar ya da harfler fonla kontrast oluşturmalıdır. Eğer insan fotoğrafı kullanılacaksa, ya bu kişiler fotoğraftan tanınmamalıdır ya da yazılı izin alınmalıdır (Etik bölümüne bakınız).

Şekiller metinde geçiş sıralarına göre numaralandırılmalıdır. Eğer önceden yayınlanmış bir şekil kullanılacaksa, yayın hakkını elinde bulunduran bireyden izin alınmalıdır. Toplum alanındaki belgeler hariç yazarlığa ve yayıncıya bakılmadan bu izin gereklidir. Basılacak bölgeyi gösteren ek çizimler editörün işini kolaylaştırır. Renkli şekiller editör gerekli gördüğünde ya da sadece yazar ek masrafı karşılarsa basılır.

Şekillerin Dipnotları

Ayrı bir sayfadan başlayarak şekiller için tablo başlıkları ve dipnotları tek aralıklı olarak ve Arap sayıları ile hangi şekle karşı geldikleri belirtilerek yazılmalıdır. Semboller, oklar, sayılar ya da harfler şeklin parçalarını belirtmek için kullanıldığında, dipnotlarda her biri açıkça tanımlanmalıdır. Fotomikrografik patoloji preparatlarında iç ölçek ve boyama tekniği açıklanmalıdır.

Ölçüm Birimleri

Uzunluk, ağırlık ve hacim birimleri metrik (metre, kilogram, litre) sistemde ve bunların onlu katları şeklinde rapor edilmelidir. Sıcaklıklar Celsius derecesi, kan basıncı milimetre civa cinsinden olmalıdır. Ölçü birimlerinde hem lokal hem de Uluslararası Birim Sistemleri (International System of Units, SI) kullanılmalıdır. İlaç konsantrasyonları ya SI ya da kütle birimi olarak verilir, alternatif olarak parantez içinde de verilebilir.

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Teşekkür(ler)

Yazının sonunda kaynaklardan önce yer verilir. Bu bölümde kişisel, teknik ve materyal yardımı gibi nedenlerle yapılacak teşekkür ifadeleri yer alır.

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Makale Hazırlığı :

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Tanısal doğruluk çalışmalarının raporlanması için STARD kontrol listesi (Bossuyt PM, Reitsma JB, Bruns DE, Gatsonis CA, Glasziou PP, Irwig LM, vd, STARD Grubu için. Teşhis doğruluğu çalışmalarının eksiksiz ve doğru raporlanmasına yönelik: STARD girişimi, Ann Intern Med 2003; 138: 40-4.) (http://www. stard-statement.org /),

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Raymond NC, Specker S, Eckert ED, et al. Increased mortality in bulimia nervosa and other eating disorders. Am J Psychiatry 2009;166(12):1342-1346.

MEDLINE'da yer almayan ve kısaltması olmayan dergi makalesi için: Sevinçer GM, Konuk N. Emotional eating. Journal of Mood Disorders 2013;3(4):171-178.

2. Ek sayı için:

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MEDLINE'da yer almayan ve kısaltması olmayan dergi makalesi için: Maner F. Yeme bozukluklarının tedavisi. Anadolu Psikiyatri Dergisi 2009;10(Ek 1):55-56.

3. Baskıdaki makale için:

Cossrow N, Pawaskar M, Witt EA, Ming EE, Victor TW, Herman BK, et al. Estimating the prevalence of binge eating disorder in a community sample from the United States: comparing DSM-IV-TR and DSM-5 criteria. J Clin Psychiatry, 2016. (in press).

4. Kitaptan alıntılar:

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McKnight TL. Obesity Management in Family Practice. 1st ed., New York:Springer, 2005:47-51.

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Eckel RH (editor). Treatment of obesity with drugs in the new millennium. In Obesity Mechanisms and Clinical Management. 1st ed., Philadelphia: Lippincott Williams & Wilkins, 2003:449-476.

Çeviri Kitaptan Alıntı için:

McGuffin P, Owen MJ, Gottsman II. Psikiyatri Genetiği ve Genomiği. Abay E, Görgülü Y (translation editors) 1st ed., Istanbul: Nobel Tıp Kitabevleri, 2009:303-341.

5. Tezden alıntı için:

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Kaul S, Diamond GA. Good enough: a primer on the analysis and interpretation of noninferiority trials. Ann Intern Med [Internet]. 4 Temmuz 2006 [Atıf tarihi:4 Ocak 2007];145(1):62-9. Erişim adresi:http://www.annals.org/cgi/reprint/145/1/62.pdf

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Bağcılar Tıp Bülteni

CONTENTS / İÇİNDEKİLER

ORIGINAL RESEARCH

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Determination of Burnout and Job Satisfaction Levels in Nurses Working in the Surgical Clinics

Cerrahi Kliniğinde Çalışan Hemşirelerde Tükenmişlik ve İş Tatmini Düzeylerinin Belirlenmesi

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Abstract

Objective: The aim of this study was to assess the effect of socio-demographic and professional characteristics of nurses working in the surgical services on their burnout and job satisfaction levels.

Method: The study was conducted with 95 nurses, who were voluntary to participate in the study, among 104 nurses working in the surgical services (except for outpatient clinics and emergency surgery units). Introductory information form, Maslach Burnout Inventory, and Minnesota Satisfaction Questionnaire were used in order to collect the data. The statistical analysis was performed using frequency and percentage distribution, t-test, one-way analysis of variance, Tukey test, Kruskal-Wallis test, and Mann-Whitney U test.

Results: It was found that 78.9% of the nurses were female, 28.4% were in the age group of 30-34 years, 38.9% had a bachelor's degree, 56.8% were single, 46.3% were working in the institution for 0-3 years, 57.9% had no children, 64.2% had an income equal to expenses, and 60% used public transportation. It was observed that the emotional exhaustion and depersonalization subscale scores of the nurses were higher in the age group of 25-29 years than the age group of 20-24 years ($p<0.05$) and 40 years and over (emotional exhaustion $p<0.01$; depersonalization, $p<0.05$). It was determined that the depersonalization subscale scores of those without children were higher than those having two and more children ($p<0.05$). Personal accomplishment subscale scores of the nurses working for 9-11 years were lower than the other groups. It was observed that those having a working year of 1-3 years had higher scores on extrinsic satisfaction than those having a working year of 4-8 years ($p<0.05$). All score of nurses who chose the profession due to finding a job quickly was significantly lower than the other groups ($p<0.05$). It was determined that intrinsic, extrinsic and general satisfaction of those who

Öz

Amaç: Bu çalışma, cerrahi servislerinde çalışan hemşirelerde sosyo-demografik ve mesleki özelliklerin, tükenmişlik ve iş doyumu düzeylerine etkisinin değerlendirilmesi amacıyla yapıldı.

Yöntem: Araştırma cerrahi servislerinde çalışan (poliklinikler ve acil cerrahi birimler dışında) 104 hemşireden çalışmaya katılmayı gönüllü olarak kabul eden 95'i ile gerçekleştirildi. Verileri toplamak amacıyla hemşirelere tanıtıcı bilgi formu, Maslach Tükenmişlik Ölçeği ve Minnesota Doyum Ölçeği uygulandı. İstatistiksel analizde; frekans ve yüzde dağılımı, t-test, tek yönlü varyans analizi, Tukey testi, Kruskal-Wallis test, Mann-Whitney U testleri kullanıldı.

Bulgular: Hemşirelerin %78,9'unun kadın, %28,4'ünün 30-34 yaş grubunda, %38,9'u lisans mezunu, %56,8'i bekar olduğu, %46,3'ünün 0-3 yıldır kurumda çalıştığı, %57,9'unun çocuk sahibi olmadığı, %64,2'sinin gelirinin gidere eşit olduğu, %60'ının toplu taşımayla ulaşım sağladığı saptandı. Yirmi beş-yirmi dokuz yaş grubu hemşirelerin duygusal tükenme ve duyarsızlaşma alt boyut puanlarının 20-24 yaş grubundan ($p<0,05$), 40 yaş ve üzeri hemşirelerden (duygusal tükenme $p<0,01$; duyarsızlaşma, $p<0,05$) daha yüksek olduğu görüldü. Çocuk sahibi olmayanların duyarsızlaşma alt boyutu puanlarının iki ve daha fazla çocuk sahibi olanlardan daha yüksek olduğu saptandı ($p<0,05$). Dokuz-onbir yıldır çalışan hemşirelerin kişisel başarı alt boyutu puanı 4-8 yıl ($p<0,05$) ve 16 yıl ve üzeri çalışanlardan ($p<0,001$) yüksek olduğu saptandı. Çalışma yılı 0-3 yıl olanların dışsal doyumdan 4-8 yıl olanlara göre daha yüksek puan aldıkları görüldü ($p<0,05$). Kısa yoldan iş sahibi olma nedeni ile mesleği seçenlerin içsel, dışsal doyum alt boyut puanları ve toplam puanının diğer tüm gruplara göre düşük olduğu saptandı ($p<0,05$). Geliri giderinden yüksek olanların içsel, dışsal ve genel, servis aracıyla gelenlerin dışsal ve genel, yıllık izin süresi iki hafta olanların üç hafta olanlara göre iş doyumu,

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Abstract

had higher income than expenses, extrinsic and general satisfaction of those who came with shuttle, and job satisfaction, general satisfaction score and subscale scores of those having two weeks of annual leave were higher than those having annual leave of three weeks ($p<0.05$). Also, the burnout and job satisfactions of the nurses were moderate and there was a negative correlation between the burnout and job satisfaction ($p<0.05$).

Conclusion: It was observed that nurses which age group of 25-29 years, without children, who worked for 9-11 years in the institution burnout levels were high. At the same time, nurses which with high economic status, transporting with shuttle, who used a 2-week annual leave, who did not chose the profession due to finding a job quickly had higher job satisfaction. Organizing the regulations that will increase the work motivation of the nurses will reduce the emotional exhaustion and depersonalization.

Keywords: Surgical, nurse, job satisfaction, burnout

Öz

genel doyum puanı ve alt boyutları puanı daha yüksek saptandı ($p<0.05$). Hemşirelerin tükenmişlik ve iş doyumlarının orta düzeyde olduğu, tükenmişlik ile iş doyumu arasında negatif yönde ilişki olduğu saptandı ($p<0.05$).

Sonuç: Hemşirelerden 25-29 yaş grubundakilerin, çocuk sahibi olmayanların, kurumda bulunma süresi 9-11 yıl olanların tükenmişliklerinin yüksek olduğu görüldü. Aynı zamanda yüksek ekonomik duruma sahip olanların, kısa yoldan iş sahibi olma nedeni ile mesleği seçmeyenlerin, yıllık izin süresi iki hafta olanların, servis aracı kullananların iş doyumlarının yüksek olduğu görüldü. Hemşirelerin çalışma motivasyonunu artıracak düzenlenmelerin yapılması duygusal tükenmişlik ve duyarsızlaşmayı azaltacaktır.

Anahtar kelimeler: Cerrahi, hemşire, iş doyumu, tükenmişlik

Introduction

Burnout can be defined as a condition accompanied by symptoms such as physical exhaustion and the development of negative attitudes towards employees and life resulting from long-term working in environments with intense emotional demands (1). Job satisfaction signifies the harmony between the properties of the work and the properties that individuals find in themselves. The job satisfaction is determined by the differences that arise when the nurses compare their own standards with how much of those standards are met (2). An individual hospitalized due to surgical causes may exhibit many negative feelings, thoughts and behaviors related to his/her disease or hospital setting. As a result, job dissatisfaction and burnout symptoms such as getting away from the job, leaving the job and frequently changing the job can be seen (3). It is very important for nurses working in the surgical clinics to have knowledge and intention about patient education, to determine the needs and goals specific for the clinic and the patient, and to maintain communication (4). Piko (5) determined that problems associated with burnout reduce the efficiency of nurses, cause job dissatisfaction, and obstruct professionalism. Operating room medical staff are exposed to many potential hazards, including occupational traumatization, work stress, toxic and infectious agents, radiation, noise, anesthetic gases, working late into the night with a few people, working for extended periods in nonphysiological positions, and disturbances in the workplace that threaten the security of staff (6). This demanding nature of jobs and stress is found to be a cause of job burnout, but the construct of job burnout and its consequences in the health sector are not comprehensively reviewed (7). This study was conducted to determine the effect of socio-demographic characteristics and professional features of surgical nurses on their burnout and job satisfaction levels.

Material and Methods

A cross-sectional, descriptive correlational study was conducted with 95 surgical nurses who were voluntary to participate in the study, among 104 nurses employed in different surgical wards and clinics in a state hospital and five educational research hospitals (except for the outpatient clinics and emergency surgery units) in İstanbul after the approval of Haliç University Ethics Committee was received (decision number: 44-2012). Introductory information form, Maslach Burnout Inventory, and Minnesota Satisfaction Questionnaire were applied to the nurses in order to collect the data.

Introductory Information Form

The introductory information form includes the questions related to the socio-demographic characteristics of the nurses such as gender, age, marital status, status of having a child, economic status, and educational status. Regarding the professional characteristics, there are questions about total working duration in the institution, reason for choosing the profession, way of transportation, and the time of annual leave.

Maslach Burnout Inventory

It was translated into Turkish by Ergin (8) and the inventory was constructed with 22 items scored on a Likert scale from 0 (refers ton ever) to 4 (refers to always) according to the frequency with which stressors are perceived. The 22 items are composed by the subscales emotional exhaustion (1, 2, 3, 6, 8, 13, 14, 16, 20 items), depersonalization (5, 10, 11, 15, 22 items) and personal accomplishment (4, 7, 9, 12, 17, 18, 19, 21 items).

Scores from each of these subscales may be graded as high, moderate, or low according to validated cut-offs. Emotional exhaustion scores were graded as follows: low, 0-11 points; moderate, 12-17 points and high, 18-36 points. Depersonalization scores were graded as follows: low, <4 points; moderate, 4-6,6 points and high, ≥6,7 points; and personal accomplishment scores as: low ≥27 points, 22-26 points, moderate, <22 points.

Minnesota Satisfaction Questionnaire

It was developed in 1967 by Weiss, Dawis, England & Lofquist. It was translated into Turkish by Baycan (9) and its validity and reliability studies were conducted. The Minnesota Satisfaction Questionnaire's indicates how satisfied or dissatisfied respondents are with their jobs by asking respondents to rate themselves on 20 questions by using a five-point scale (1: very dissatisfied to 5: very satisfied). The questionnaire gives intrinsic satisfaction subscale, extrinsic satisfaction subscale, and general satisfaction scores. The overall satisfaction score is obtained by dividing the total score of the all items into 20, the intrinsic satisfaction by dividing the score of items (1.2.3.4.7.8.9.10.11.15.16.20) into 12, and the extrinsic satisfaction by dividing the score of items (5.6.12.13.14.17.18.19) into 8. Score increase indicates increased job satisfaction (9).

Statistical Analysis

The statistical analysis of the data was performed in the computer environment via SPSS 15.0 statistical analysis package program along with t-test, one-way analysis of variance, Tukey test, Kruskal-Wallis test, and Mann-Whitney U test.

Results

It was found that 78.9% of the nurses were female, 28.4% were in the age group of 30-34 years, 38.9% had a bachelor's degree, 56.8% were single, 46.3% were working in the institution for 1-3 years, 57.9% had no children, 64.2% had an income equal to their expenses, and 60% were using public transportation. Table 1 shows the frequency

Table 1. Socio-demographic and professional variables of the nurses working in the surgical clinics (n=95)

Variable	Variable categories	n	%	Variable	Variable categories	n	%
Gender	Female	75	78.9	Marital status	Married	441	43.2
	Male	20	21.1		Single	554	56.8
Age group	20-24 years	19	20.0	Number of children	None	55	57.9
	25-29 years	26	27.4		1	20	21.1
	30-34 years	27	28.4		2 and more	20	21.1
	35-39 years	12	12.6	Economic status	Income < expense	11	11.6
	40 years and over	11	11.6		Income = expense	61	64.2
Educational status	Vocational high school	25	26.4		Income > expense	223	24.2
	Associate's degree	22	23.2	Transportation type	On foot	12	12.6
	Bachelor's degree	37	38.9		With shuttle	118	18.9
	Graduate's degree	11	11.6		Public transportation	557	60.0
Duration of working in the institution	1-3 years	44	46.3		Own car	88	8.5
	4-8 years	22	23.2	Time of annual leave	2 weeks	38	40
	9-11 years	9	9.5		3 weeks	227	28.4
	12-15 years	7	7.4		4 weeks	330	31.6
	16 years and more	13	13.7	Reason for working in the institution	No night shift	5	5.3
Reason for choosing the Profession	Having a health-related job	30	31.6		Close to home	13	13.7
	Having a job quickly	16	16.8		Non-heavy working conditions	8	8.4
	Ease of employment	21	22.1		Economic reasons	13	13.7
	Family's suggestion	23	24.2		Designation	56	58.9
	Recommendation of others	5	5.3				

and percentage distribution of socio-demographic and professional variables of the nurses.

Maslach Burnout Inventory Results

It was seen that the nurses took a mean score of 20.43±5.14 from the personal accomplishment subscale; 18.27±7.33 from the emotional exhaustion subscale; and 7.07±4.43 from the depersonalization subscale of Maslach Burnout Inventory (Table 2). No significant difference was determined between the subscale scores of the nurses in terms of the variables of gender, marital status, educational status, economic status, choosing the profession, transportation, and annual leave period (p>0.05). The emotional exhaustion and depersonalization subscale scores of the nurses were higher in the age group of 25-29 years than the age group of 20-24 years (p<0.05) and 40 years and over (emotional exhaustion p<0.01; depersonalization, p<0.05).

It was found that depersonalization subscale scores of those with no children were higher than those with two or more children (p<0.05). Also, the personal accomplishment subscale scores of the nurses who worked for 9-11 years were lower than other all groups and the nurses who worked for 9-11 years have highest burnout (p<0.05) (Table 3).

Satisfaction Questionnaire Results

It was found that the scores of the nurses were 3.27±0.66 points for the intrinsic satisfaction subscale of the Minnesota Satisfaction Questionnaire, 2.85±0.75 points for its extrinsic satisfaction subscale; and 3.10±0.65 points for its general satisfaction subscale (Table 4).

The difference in the scale scores of the nurses in terms of the variables of age, gender, education, marital status, having children, reason for working in the institution and duration of working in the institution was not significant (p>0.05). Total score, intrinsic satisfaction subscale score and extrinsic satisfaction subscale score of those who chose the profession due to finding a job quickly was significantly lower than the other groups (p<0.05). Total score and subscale scores of the nurses with high economic status were significantly higher than those with moderate and low economic status (p<0.05). Intrinsic and extrinsic satisfaction subscale scores of those with high economic status were higher than the nurses with low economic status (p<0.001). Total scores and extrinsic satisfaction subscale scores of the nurses transporting with shuttle were higher than those who used public transportation and their own cars (p<0.05). Total score and subscale scores of the nurses who used a 2-week annual leave were higher than the nurses who used a 3-week annual leave (p<0.05) (Table 5).

Table 2. Burnout Inventory scores of the nurses (n=95)

Scale	Subscale	Mean ± SD	Degree of burnout
Burnout inventory	Personal accomplishment	20.43±5.14	High
	Emotional exhaustion	18.27±7.33	High
	Depersonalization	7.07±4.43	High

SD: Standard deviation

According to the correlation analysis conducted between total score of the Minnesota Satisfaction Questionnaire and subscale scores of the Maslach Burnout Inventory; it was found that there was a negative weak insignificant correlation between the personal accomplishment subscale scores of the burnout inventory and the job satisfaction scores (r=0.07; p>0.05); a negative significant and strong correlation between the emotional exhaustion subscale scores of the burnout inventory and the job satisfaction scores (r=0.50; p<0.001); and a negative significant weak correlation between the depersonalization subscale score of the burnout inventory and the job satisfaction scores (r=0.19; p<0.05).

Discussion

It was found in the present study that the level of personal accomplishment were low, the level of emotional exhaustion and depersonalization were high. The points from all three subscales indicate that nurses are very exhausted. Intensive care and internal service nurses have to deal with many different subjects and areas at the same time. The responsibility that occurs in the surgical departments, the limitation of authority has a higher motivation than the nurses working they are provided. Most of the study showed burnout score levels are higher in surgical departments (10,11,12).

Nurses working in operation room suffer from higher levels of emotional fatigue than nurses working in surgical ward. In general, the study shows that nurses working in surgical ward suffer from higher levels of emotional fatigue and depersonalization than nurses working in other departments (13).

In this study, it was seen that while job satisfaction of the nurses was high (3.10±0.65), their intrinsic satisfaction (2.94±0.62) and extrinsic satisfaction (2.85±0.75) were low.

Table 3. Burnout Inventory Scores of the nurses in term of socio-demographic and professional variables (n=95)

Variable	Variable categories	Subscales: Personal accomplishment (0-32 points) Mean ± SD	Emotional exhaustion (0-36 points) Mean ± SD	Depersonalization (0-20 points) Mean ± SD
Gender	Female	20.46±4.79	20.46±6.54	6.65±4.31
	Male	20.35±6.45	20.30±6.72	8.65±4.65
	Test values	t=0.12 p=0.89	t=0.78 p=0.43	t=1.80 p=0.07
Age	20-24 years[1]	19.10±5.59	16.42±5.02	6.00±3.17
	25-29 years[2]	22.03±4.66	20.88±8.15	9.34±5.26
	30-34 years[3]	19.03±5.59	16.74±6.15	6.88±4.10
	35-39 years[4]	20.08±3.20	19.75±5.01	6.50±3.28
	40 years and over[5]	22.72±4.92	14.90±4.82	4.63±4.41
	Test values	F=2.09 p=0.08	F=2.79 p=0.03*	F=3.13 p=0.01*
		1-2 p=0.30, 1-3 p=1.00	1-2 p=0.05*, 1-3 p=1.00	1-2 p=0.05*, 1-3 p=0.95
		1-4 p=0.98, 1-5 p=0.32	1-4 p=0.61, 1-5 p=0.97	1-4 p=0.99, 1-5 p=0.91
		2-3 p=0.20, 2-4 p=0.79	2-3 p=0.13, 2-4 p=0.98	2-3 p=0.22, 2-4 p=0.31
		2-5 p=0.99, 3-4 p=0.97	2-5 p=0.01*, 3-4 p=0.64	2-5 p=0.02*, 3-4 p=0.99
		3-5 p=0.2, 4-5 p=0.71	3-5 p=0.9, 4-5 p=0.36	3-5 p=0.5, 4-5 p=0.83
Marital status	Married	20.48±4.97	18.60±5.32	7.80±4.37
	Single	20.38±5.32	17.50±6.29	6.51±4.44
	Test values	t=0.009 p=0.92	t=0.66 p=0.41	t=1.97 p=0.16
Number of children	None[0]	20.96±4.95	18.65±6.53	7.96±4.20
	1 child[1]	19.75±5.96	18.20±7.66	6.55±5.41
	2 children and more[2]	19.65±4.88	15.90±5.24	5.15±3.37
	Test values	F=0.69 p=0.50	F=1.31 p=0.27	F=3.27 p=0.04*
		0-1 p=0.64, 0-2 p=0.59	0-1 p=0.96, 0-2 p=0.24	0-1 p=0.42, 0-2 p=0.03*
		1-2 p=0.98	1-2 p=0.51	1-2 p=0.56
Educational status	Vocational high school[1]	21.75±5.16	17.72±6.85	8.20±5.11
	Associate's degree[2]	18.86±5.80	16.09±5.94	6.45±4.02
	Bachelor's degree[3]	20.59±4.03	18.21±5.87	6.13±3.65
	Graduate's degree[4]	19.36±6.36	19.62±9.10	9.36±5.33
	Test values	F=1.7 p=0.14	F=0.93 p=0.47	F=1.98 p=0.11
		1-2 p=0.15, 1-3 p=0.69	1-2 p=0.31, 1-3 p=0.89	1-2 p=0.62, 1-3 p=0.35
		1-4 p=0.47, 2-3 p=0.58	1-4 p=0.89, 2-3 p=0.62	1-4 p=0.82, 2-3 p=0.99
		2-4 p=0.99, 3-4 p=0.89	2-4 p=0.90, 3-4 p=0.89	2-4 p=0.27, 3-4 p=0.14
Duration of Working in the institution	1-3 years[1]	20.63±4.76	17.79±6.69	7.70±4.61
	4-8 years[2]	21.27±5.48	21.68±9.33	7.72±4.92
	9-11 years[3]	15.33±5.97	13.66±5.52	6.44±3
	12-15 years[4]	19±2.08	18.57±4.72	4.42±3.3
	16 years and more[5]	22.61±4.5	17.15±6.14	5.69±3.9
	Test values	KW=3.40 p=0.01	KW=1.86 p=0.12	KW=1.34 p=0.26
		1-2 p=0.98, 1-3 p=0.03*	1-2 p=0.53, 1-3 p=0.41	1-2 p=1.00, 1-3 p=0.93
		1-4 p=0.93, 1-5 p=0.70	1-4 p=0.99, 1-5 p=0.99	1-4 p=0.36, 1-5 p=0.60
		2-3 p=0.02*, 2-4 p=0.82	2-3 p=0.07, 2-4 p=0.96	2-3 p=0.94, 2-4 p=0.42
		2-5 p=0.93, 3-4 p=0.04*	2-5 p=0.60, 3-4 p=0.56	2-5 p=0.68, 3-4 p=0.89
		3-5 p=0.00**, 4-5 p=0.51	3-5 p=0.73, 4-5 p=0.99	3-5 p=0.99, 4-5 p=0.97

Table 3. Continued

Variable	Variable categories	Subscales		
		Personal accomplishment (0-32 points) Mean ± SD	Emotional exhaustion (0-36 points) Mean ± SD	Depersonalization (0-20 points) Mean ± SD
Reason for choosing the profession	Having a health-related job[1]	20.60±6.04	15.93±6.10	6±3.93
	Finding a job quickly[2]	18.75±3.49	17.37±6.20	7.5±5.17
	Ease of employment[3]	20.42±4.88	19.19±5.50	8±3.98
	Family's suggestion	20.82±4.81	20.30±6.96	7.69±4.79
	Recommendation of others[5]	23.00±6.70	16.40±10.35	5.40±5.02
	Test values	KW=0.77 p=0.54	KW=1.79 p=0.13	KW=0.99 p=0.49
		1-2 p=0.77, 1-3 p=1.00	1-2 p=0.95, 1-3 p=0.39	1-2 p=0.81, 1-3 p=0.51
		1-4 p=1.00, 1-5 p=0.87	1-4 p=0.11, 1-5 p=1.00	1-4 p=0.64, 1-5 p=0.99
		2-3 p=0.86, 2-4 p=0.73	2-3 p=0.91, 2-4 p=0.63	2-3 p=0.99, 2-4 p=1.00
		2-5 p=0.49, 3-4 p=0.99	2-5 p=0.99, 3-4 p=0.97	2-5 p=0.88, 3-4 p=0.99
		3-5 p=0.85, 4-5 p=0.91	3-5 p=0.90, 4-5 p=0.73	3-5 p=0.76, 4-5 p=0.83
Reason for working in the institution	No night shift[1]	16.60±7.79	12.40±6.06	4.60±3.04
	Close to home[2]	18.92±4.13	17.61±7.24	6.69±5.42
	Non-heavy working conditions[3]	22.00±5.12	19.12±10.98	8.50±7.54
	Economic reasons[4]	18.38±5.28	16.76±6.12	7.53±3.64
	Designation[5]	21.37±4.85	18.67±5.67	7.07±3.93
	Test values	KW=2.25 p=0.06	KW=1.25 p=0.29	KW=0.64 p=0.63
		1-2 p=0.90, 1-3 p=0.33	1-2 p=0.55, 1-3 p=0.37	1-2 p=0.90, 1-3 p=0.54
		1-4 p=0.96, 1-5 p=0.25	1-4 p=0.71, 1-5 p=0.24	1-4 p=0.72, 1-5 p=0.76
		2-3 p=0.65, 2-4 p=0.99	2-3 p=0.98, 2-4 p=0.99	2-3 p=0.89, 2-4 p=0.98
		2-5 p=0.50, 3-4 p=0.49	2-5 p=0.98, 3-4 p=0.92	2-5 p=0.99, 3-4 p=0.98
		3-5 p=0.99, 4-5 p=0.30	3-5 p=1.00, 4-5 p=0.87	3-5 p=0.91, 4-5 p=0.99
Economic status	Income < expense[1]	20.77±2.94	20.55±4.47	8.11±3.62
	Income = expense[2]	20.47±5.13	17.34±6.07	6.67±4.39
	Income > expense[3]	20.71±5.56	18.09±7.46	8.00±5.13
	Test values	F=0.80 p=0.52	F=0.80 p=0.52	F=0.5 p=0.71
		1-2 p=0.65, 1-3 p=0.45	1-2 p=0.75, 1-3 p=0.65	1-2 p=0.97, 1-3 p=0.88
		2-3 p=0.40	2-3 p=0.88	2-3 p=0.76
Transportation type	On foot[1]	18±9.22	20.25±4.97	7.08±5.33
	With shuttle[2]	14.88±4.73	20.77±5.76	6.61±4.27
	Public transportation[3]	19.45±7.69	20.54±5.31	7.15±4.39
	Own car[4]	17.87±4.45	19.12±2.85	7.5±4.47
	Test values	KW=0.40 p=0.80	KW=1.34 p=0.26	KW=0.67 p=0.61
		1-2 p=0.99, 1-3 p=0.99	1-2 p=0.57, 1-3 p=0.96	1-2 p=0.99, 1-3 p=0.9
		1-4 p=0.96, 2-3 p=0.99	1-4 p=0.09, 2-3 p=0.10	1-4 p=0.99, 2-3 p=0.97
		2-4 p=0.87, 3-4 p=0.88	2-4 p=0.70, 3-4 p=0.97	2-4 p=0.96, 3-4 p=0.99
Annual leave time (week)	2 weeks[1]	20.00±5.45	17.58±6.76	7.35±4.30
	3 weeks[2]	20.88±4.95	19.11±6.62	7.51±4.66
	4 weeks[3]	21.10±4.77	17.83±6.23	6.20±4.32
	Test values	F=0.96 p=0.41	F=0.51 p=0.67	F=0.58 p=0.62
		1-2 p=0.91, 1-3 p=0.83	1-2 p=0.81, 1-3 p=0.99	1-2 p=0.74, 1-3 p=0.99
		2-3 p=0.99	2-3 p=0.88	2-3 p=0.68

SD: Standard deviation, F: One-way analysis of variance, KW: Kruskal-Wallis test, t: Student t-test, *p<0.05; **p<0.01

Table 4. Satisfaction Questionnaire Scores of the nurses (n=95)

Scale	Subscale	Mean ± SD
Satisfaction Questionnaire	Intrinsic satisfaction	3.27±0.66
	Extrinsic satisfaction	2.85±0.75
	General satisfaction	3.10±0.65

SD: Standard deviation

Kaplanoğlu (14) found in his study that the job satisfactions of the nurse managers were moderate. The effectiveness of the clinics in which nurses work on job satisfaction levels can be explained by nurse and patient profile in surgical clinics. In surgical clinics, patients with acute conditions are hospitalized and the patient is discharged in a short time. Yılmaz (15), showed that the nurses working in emergency

Table 5. Satisfaction Questionnaire scores of the nurses in terms of socio-demographic and professional variables (n=95)

		Subscales		
Variable	**Variable categories**	**Intrinsic satisfaction (1-5 points) Mean ± SD**	**Extrinsic satisfaction (1-5 points) Mean ± SD**	**General satisfaction (1-5 points) Mean ± SD**
Gender	Female	3±0.59	2.9±0.76	3.16±0.63
	Male	2.73±0.68	2.65±0.71	2.88±0.68
	Test values	t=1.69 p=0.09	t=1.31 p=0.19	t=1.74 p=0.08
Age	20-24 years[1]	3.03±0.58	3.11±0.65	3.26±0.6
	25-29 years[2]	2.84±0.76	2.7±0.81	2.98±0.76
	30-34 years[3]	2.85±0.62	2.73±0.81	3±0.67
	35-39 years[4]	2.92±0.48	2.71±0.53	3.04±0.47
	40 years and over[5]	3.26±0.35	3.2±0.72	3,44±0.50
	Test values	F=1.1 p=0.33	F=1.7 p=0.15	F=1.4 p=0.24
		1-2 p=0.89, 1-3 p=0.90	1-2 p=0.37, 1-3 p=0.45	1-2 p=0.63, 1-3 p=0.68
		1-4 p=0.99, 1-5 p=0.87	1-4 p=0.61, 1-5 p=0.99	1-4 p=0.89, 1-5 p=0.94
		2-3 p=1.00, 2-4 p=0.99	2-3 p=1.00, 2-4 p=1.00	2-3 p=1.00, 2-4 p=0.99
		2-5 p=0.40, 3-4 p=0.99	2-5 p=0.34, 3-4 p=1.00	2-5 p=0.30, 3-4 p=1.00
		3-5 p=0.41, 4-5 p=0.73	3-5 p=0.40, 4-5 p=0.52	3-5 p=0.34, 4-5 p=0.58
Marital Status	Married	2.88±0.65	2.92±0.71	3.09±0.67
	Single	2.99±0.60	2.79±0.78	3.11±0.64
	Test values	t=0.83 p=0.4	t=0.84 p=0.39	t=0.13 p=0.89
Number of children	None[0]	2.88±0.68	2.84±0.77	3.06±0.69
	1 child[1]	3.02±0.57	2.7±0.87	3.09±0.67
	2 children and more[2]	3.03±0.49	3.02±0.57	3.22±0.51
	Test values	F=0.56 p=0.57	F=0.92 p=0.40	F=0.42 p=0.65
		0-1 p=0.66, 0-2 p=0.68	0-1p=0.73, 0-2 p=0.64	0-1 p=0.98, 0-2 p=0.63
		1-2 p=1.00	1-2 p=0.36	1-2 p=0.81
Educational status	Vocational high school[1]	3.1±0.60	2.93±0.79	3.22±0.65
	Associate's degree[2]	2.87±0.51	2.81±0.64	3.04±0.54
	Bachelor's degree[3]	2.86±0.68	2.80±0.78	3.04±0.70
	Graduate's degree[4]	2.99±0.65	2.90±0.87	3.16±0.72
	Test values	F=0.83 p=0.47	F=0.17 p=0.91	F=0.48 p=0.69
		1-2 p=0.50, 1-3 p=0.70	1-2 p=0.68, 1-3 p=0.66	1-2 p=0.78, 1-3 p=0.70
		1-4 p=0.72, 2-3 p=1.00	1-4 p=0.59, 2-3 p=1.72	1-4 p=0.99, 2-3 p=1.00
		2-4 p=0.90, 3-4 p=0.87	2-4 p=0.89, 3-4 p=0.99	2-4 p=0.95, 3-4 p=0.94
Duration of Working in the institution	1-3 years[1]	3.06±0.71	3.11±0.78	3.28±0.7
	4-8 years[2]	2.61±0.71	2.44±0.71	2.73±0.71
	9-11 years[3]	3.03±0.71	2.94±0.84	3.19±0.66
	12-15 years[4]	2.89±0.54	2.75±0.54	3.04±0.45

Table 5. Continued

Variable	Variable categories	Subscales		
		Intrinsic satisfaction (1-5 points) Mean ± SD	Extrinsic satisfaction (1-5 points) Mean ± SD	General satisfaction (1-5 points) Mean ± SD
Duration of Working in the institution	16 years and more[5]	3.08±0.48	2.93±0.72	3.22±0.56
	Test values	KW=1.34 p=0.25	KW=2.64 p=0.049	KW=1.86 p=0.055
		1-2 p=0.12 1-3 p=1	1-2 p=0.2, 1-3 p=0.94	1-2 p=0.4, 1-3 p=0.9
		1-4 p=0.91, 1-5 p=1.00	1-4 p=0.52, 1-5 p=0.92	1-4 p=0.76, 1-5 p=0.69
		2-3 p=0.23, 2-4 p=0.65	2-3 p=0.2, 2-4 p=0.03	2-3 p=0.19, 2-4 p=0.049
		2-5 p=0.13, 3-4 p=0.96	2-5 p=0.2, 3-4 p=0.57	2-5 p=0.3, 3-4 p=0.75
		3-5 p=0.9, 4-5 p=0.89	3-5 p=1.00, 4-5 p=0.51	3-5 p=0.9, 4-5 p=0.8
Reason for choosing the profession	Having a health-related job[1]	2.96±0.67	2.94±0.77	3.15±0.69
	Finding a job quickly[2]	2.71±0.6	2.42±0.69	2.79±0.6
	Ease of employment[3]	3.02±0.64	3.09±0.6	3.23±0.63
	Family's suggestion[4]	2.88±0.35	3.1±0.58	3.17±0.46
	Recommendation of others[5]	3.23±0.5	2.99±0.79	3.33±0.6
	Test values	KW=3.79 p=0.04	KW=3.05 p=0.05	KW=4.44 p=0.00
		1-2 p=0.04*, 1-3p=0.02*	1-2 p=0.049,1-3 p=0.04*	1-2 p=0.02*, 1-3 p=0.04*
		1-4 p=0.9, 1-5 p=0.64	1-4 p=0.96, 1-5 p=0.98	1-4 p=0.76, 1-5 p=0.88
		2-3 p=0.03*, 2-4 p=0.02*	2-3 p=0.04* 2-4 p=0.03*	2-3 p=0.04, 2-4 p=0.03*
		2-5 p=0.012*, 3-4 p=0.99	2-5 p=0.037*, 3-4 p=0.9	2-5 p=0.012*, 3-4 p=0.91
		3-5 p=0.94, 4-5 p=0.73	3-5 p=0.99, 4-5 p=0.9	3-5 p=0.78, 4-5 p=0.09
Reason for working in the institution	No night shift[1]	3.4±0.43	3.6±0.55	3.7±0.49
	Close to home[2]	2.91±0.58	2.86±0.72	3.09±0.64
	Non-heavy working conditions[3]	3.16±0.71	3.35±0.88	3.44±0.82
	Economic reasons[4]	2.91±0.72	2.76±0.76	3.05±0.73
	Designation[5]	2.88±0.6	2.73±0.71	3.03±0.6
	Test values	KW=1.25 p=0.35	KW=2.39 p=0.06	KW=1.97 p=0.19
		1-2 p=0.55, 1-3 p=0.9	1-2 p=0.22, 1-3 p=0.97	1-2 p=0.54, 1-3 p=0.06
		1-4 p=0.46, 1-5 p=0.35	1-4 p=0.20, 1-5 p=0.09	1-4 p=0.06, 1-5 p=0.78
		2-3 p=0.71, 2-4 p=0.9	2-3 p=0.54, 2-4 p=0.99	2-3 p=0.26, 2-4 p=0.78
		2-5 p=0.8, 3-4 p=0.91	2-5 p=0.97, 3-4 p=0.38	2-5 p=0.37, 3-4 p=0.97
		3-5 p=0.67, 4-5 p=0.9	3-5 p=0.16, 4-5 p=0.9	3-5 p=0.07, 4-5 p=0.07
Economic status	Income < expense[1]	2.4±0.55	2.13±0.47	2.48±0.46
	Income = expense[2]	2.91±0.58	2.87±0.69	3.09±0.61
	Income > expense[3]	3.28±0.57	3.13±0.82	3.43±0.63
	Test values	F=8.40 p=0.00	F=7.44 p=0.00	F=5.87 p=0.00
		1-2 p=0.03*, 1-3 p=0.00**	1-2 p=0.00**, 1-3 p=0.00**	1-2 p=0.24, 1-3 p=0.01*
		2-3 p=0.03*	2-3 p=0.30	2-3 p=0.01
Transportation type	On foot[1]	2.93±0.8	2.92±0.89	3.12±0.84
	With shuttle[2]	3.27±0.37	3.34±0.39	3.5±0.36
	Public transportation[3]	2.88±0.62	2.76±0.73	3.03±0.64
	Own car[4]	2.67±0.57	2.28±0.85	2.72±0.62
	Test values	KW=2.16 p=0.09	KW=4.80 p=0.00	KW=2.67 p=0.03
		1-2 p=0.49, 1-3 p=0.99	1-2 p=0.41, 1-3 p=0.89	1-2 p=0.39, 1-3 p=0.96
		1-4 p=0.84, 2-3 p=0.11	1-4 p=0.20, 2-3 p=0.02*	1-4 p=0.50, 2-3 p=0.03*
		2-4 p=0.15, 3-4 p=0.86	2-4 p=0.01*, 3-4 p=0.28	2-4 p=0.02*, 3-4 p=0.57

Table 5. Continued

Variable	Variable categories	Subscales		
		Intrinsic satisfaction (1-5 points) Mean ± SD	Extrinsic satisfaction (1-5 points) Mean ± SD	General satisfaction (1-5 points) Mean ± SD
Annual leave time (week)	2 weeks[1]	3.09±0.63	3.02±0.8	3.26±0.67
	3 weeks[2]	2.68±0.64	2.6±0.7	2.87±0.67
	4 weeks[3]	2.99±0.52	2.85±0.63	3.13±0.54
	Test values	F=3.40 p=0.06	F=2.59 p=0.08	F=2.58 p=0.05
		1-2 p=0.047*, 1-3 p=0.80	1-2 p=0.036, 1-3 p=0.61	1-2 p=0.04*, 1-3 p=0.05
		2-3 p=0.16	2-3 p=0.40	2-3 p=0.31

F: One-way analysis of variance, KW: Kruskal-Wallis test, t: Student t-test, *p<0.05; **p<0.01

surgical intensive care unit had lowest satisfaction compared the other nurses.

In this study, there was no difference between female and male nurses in terms of burnout and job satisfaction. Ünal et al., (16) found that the life satisfaction scores of women were higher than men, but Özçınar (17) study found that job satisfaction did not differ according to gender. Rafii et al. (18) showed that there is a significant relationship between burnout and gender in the studied nurses.

The emotional exhaustion and depersonalization levels of the nurses were higher in the age group of 25-29 years than the age groups of 20-24 years and 40 years and over. Sayıl et al., (19) found no significant correlation between the age and burnout level. Again, the difference between the job satisfactions and the age groups of the nurses was not significant. Yürümezoğlu (20), Ay and Karakaya (21), and Aksakal et al., (22) stated that the job satisfaction of nurses was not affected by age.

There was no significant difference between the married and single nurses in terms of burnout and job satisfaction. Similarly, in the studies by Çam (23), Kaplanoğlu (14), and Çam et al., (24), any significant correlation was not found between the marital status and burnout.

In this study, depersonalization level of the nurses with no children was found to be higher than the nurses with two and more children. However, there was no significant difference between the burnout scale and the other subscales of the satisfaction questionnaire. A study reveals that there is a significant relationship between burnout and the number of children.

In studies, single and non-children, it was found to be more risky in terms of depersonalization and burnout. This situation is explained that the problem solving skills may be improved as the result of the married people dealing with crises and having more experience in interpersonal relations (25,26).

Similarly, the difference between the economic status and burnout and job satisfaction was not significant in the studies by Tunç (27) and Çam (23). In contrast to the study, Taycan et al., (10) showed that the job satisfaction scores of the nurses who had incomes higher than their expenses were higher than the others. In their studies, Ay and Karakaya (21), Çalışkan (28), and Demir (29) also showed the low income as a reason for dissatisfaction.

In the present study, it was found that personal accomplishment levels of the nurses with a working duration of 9-11 years in the institution were lower than other nurses. This shows that burnout is high in this group. In the study by Erçevik (30), opposite results were found. No significant difference was found between the variable of working duration and job satisfaction. In the study by Güleç (31) no significant difference was found between the duration of working in the hospital and the job satisfaction total score. In the study of Kebapcı and Akyolcu (32), it was found that nurses who had the highest number of working hours in the profession and nurses in most studies had the highest personal accomplishment. In our study nurses with a working duration of 16 years and above were found to have high personal accomplishment scores compared to nurses with a working duration of 9-11 years.

Job satisfaction total score, intrinsic satisfaction subscale score and extrinsic satisfaction subscale scores of the nurses who chose the profession due to the finding a job quickly were lower than the other nurses. According to today's conditions, finding a job quickly is an important factor in choosing a profession rather than finding the profession appropriate for him/herself. In the study by Keskin and Yıldırım (33) job satisfaction mean scores of the nurses

who expressed their satisfaction with their profession were found to be higher.

The difference between the reason of choosing the institution and the burnout and job satisfaction of the sample group was not significant. In the studies, it is stated that willingness to choose the profession is an important factor affecting the level of burnout. it was found that the general satisfaction and intrinsic satisfaction subscale scores of the healthcare personnel who chose the profession voluntarily were higher (34,35).

No difference was observed between the transportation type and burnout levels of the nurses. It was determined that the general job satisfaction score and extrinsic satisfaction subscale scores of the nurses who used shuttle were higher than the nurses using public transportation and their own vehicles. This included the shuttle namely the transportation facilities. It is seen that using public transportation and personal cars negatively affects nurses in both material and immaterial aspects with traffic problem.

No correlation was determined between the annual leave and burnout levels in the study. Job satisfaction, general satisfaction scores, and subscale scores of the nurses with annual leave of 2 weeks were found to be higher than those with annual leave of 3 weeks. It is possible to think that the job satisfaction increases with the confidence caused by working together with the adaptation to the new job since the nurses who have freshly started the job use minimum leave. At the same time the high level of income in this group may have affected this situation.

A negative significant correlation was determined between the job satisfaction and emotional exhaustion and depersonalization of the nurses. Regardless of the institution the nurses work, doing their jobs willingly and sticking with the job will increase the motivation at work [Arcak and Kasımoğlu (36)] and affect the job satisfaction positively by decreasing the emotional exhaustion and depersonalization. Negative properties of the working environment such as low number of employed nurses, heavy workload and insufficient rewarding can be considered as responsible (37). This is a factor for the nurses to feel tired and emotionally worn (19).

Conclusion

In this study, variables of age, number of children and duration of working in the institution was found to affect the burnout in nurses working in surgical clinics. In addition, economic situation, reason for choosing the profession, transportation type and annual leave time variables were seen to affect job satisfaction in nurses. It can be thought that the cases like improving shifts, working hours, wages, holiday and social activities, number of nurses, service facilities of those working with shifts, training and self-improvement opportunities, and development of working environment/conditions had similar effects in all of the nurses working in the surgical clinics. Studies can be conducted to improve and develop them.

Ethics

Ethics Committee Approval: The study was approved by the Haliç University Ethics Committee was received (approval number: 44-2012).

Informed Consent: Informed Consent from patients.

Peer-review: Externally peer-reviewed.

Authorship Contributions

Concept: N.K., H.Y., E.Y., K.Ö., Design: N.K., H.Y., E.Y., K.Ö. Data Collection or Processing: N.K., H.Y., E.Y., K.Ö., Analysis or Interpretation: N.K., H.Y., E.Y., Literature Search: N.K., H.Y., E.Y., K.Ö., Writing: N.K., H.Y., E.Y., K.Ö.

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References

1. Torun A. Tükenmişlik Aile Yapısı Ve Sosyal Destek İlişkileri Üzerinde Bir İnceleme, Doktora Tezi, İstanbul:1995.
2. Bilge F, Akman Y, Kelecioğlu H. Öğretim Elemanlarının İş Doyumlarının İncelenmesi. Hacet U Egit Fak 2007;32:32-41.
3. Haran S, Özgüven HD, Ölmez Ş. Ankara üniversitesi tıp fakültesi hastaneleri ve Ankara Numune Hastanesi'nde çalışan doktor ve hemşirelerde tükenmişlik düzeyleri. Kriz Derg 1998;6:75-84.
4. Acar E. Uzmanlık alanında çalışmanın iş doyumuna etkisi. Paradoks Ekonomi, Sosyoloji ve Politika Dergisi 2007;3:1-18.
5. Piko BF. Burnout, role conflict, job satisfaction and psychosocial health among Hungarian health care staff: a questionnaire survey. Int J Nurs Stud 2006;43:311-318.
6. Le Moual N, Varraso R, Zock JP, Henneberger P, Speizer FE, Kauffmann F, et al. Are operating room nurses at higher risk of severe persistent asthma? the nurses' health study. J Occup Environ Med 2013;55:973-977.
7. Paris M Jr, Hoge MA. Burnout in the mental health workforce: a review. J Behav Health Serv Res 2010;37:519-528.
8. Ergin C. Doktor ve hemşirelerde tükenmişlik ve Maslach Tükenmişlik Ölçeğinin uyarlanması. VII. Ulusal Psikoloji Kongresi Bilimsel Çalışmaları, Ankara:1993.

9. Baycan F. Farklı gruplarda çalışan gruplarda iş doyumunun bazı yönlerinin analizi. Bilim Uzmanlığı Tezi. İstanbul Boğaziçi Üniversitesi, İstanbu:1985.

10. Taycan O, Kutlu L, Çimen S, Aydın N. Bir Üniversite Hastanesinde Çalışan Hemşirelerde Depresyon ve Tükenmişlik Düzeyinin Sosyodemografik Özelliklerle İlişkisi. Anadolu Psikiyatr De 2006;7:100-108.

11. Metin Ö, Özer FG. Hemşirelerin tükenmişlik düzeyinin belirlenmesi, Atatürk Üniversitesi Hemşirelik Yüksekokulu Dergisi 2007;10:58-66.

12. Barutçu E, Serinkan C. günümüzün önemli sorunlarından biri olarak tükenmişlik sendromu ve denizlide yapılan bir araştırma, Ege Akademik Bakış 2008;8:541-561.

13. Cilingir D, Gürsoy A, Colak A. Burnout and job satisfaction in surgical nurses and other ward nurses in a tertiary hospital: a comparative study in Turkey. Health Med 2012;6:120.

14. Kaplanoğlu A. Yönetici hemşirelerin atılganlık düzeyleri ile iş doyumu arasindaki ilişki. Marmara Üniversitesi Sağlık Bilimleri Enstitüsü, Yüksek Lisans Tezi. İstanbul:2007

15. Yılmaz M. Sağlık bakım kalitesinin bir ölçütü: hasta memnuniyeti. Cumhuriyet Üniversitesi Hemşirelik Yüksekokulu Dergisi 2001;5:69-74.

16. Ünal S, Karlıdağ R, Yoloğlu S. Hekimlerde işdoyumu ve tükenmişlik düzeyleri. Klinik Psikiyatri Dergisi 2001;4:113-118.

17. Özçınar M. Asistan doktorlarda burnout sendromu, Dr. Lütfü Kırdar Kartal Eğitim ve Araştırma Hastanesi Aile Hekimliği, Aile Hekimliği Uzmanlık Tezi, İstanbul:2005.

18. Rafii F, Shamsikhsni S, Zarei M, Haghani M. Burnout and its Relationship with the Nurses' Characteristics. Iranian Journal of Nursing Research 2012;25:23-33.

19. Sayıl I, Haran S, Ölmez Ş. Ankara Üniversitesi Hastanelerinde Çalışan Doktor ve Hemşirelerin Tükenmişlik Düzeyleri. Kriz Dergisi 1997;5:71-77.

20. Yürümezoğlu HA. Yataklı tedavi kurumlarında çalışan hemşirelerin iş doyumları ve hastaların hemşirelik hizmetinden memnuniyeti. Dokuz Eylül Üniversitesi Sağlık Bilimleri Enstitüsü, Yüksek Lisans Tezi, İzmir:2007.

21. Ay A, Karakaya A. Çalışanların motivasyonunu etkileyen faktörler. Sağlık Çalışanlarına Yönelik Bir Araştırma. C.Ü. Sosyal Bilimler Dergisi 2007;31:55-67.

22. Aksakal NF, Özkan S, Baycan Z, Aycan S. Gölbaşı bölgesinde birinci basamak sağlık kuruluşlarında çalışan sağlık personelinin mesleki memnuniyet durumları. Sağlık ve Toplum Dergisi 1999;9:9-14.

23. Çam O. Hemşirelerin tükenmişlik düzeyleri ve tükenmişliği etkileyen bazı etmenlerin incelenmesi. Cumhuriyet Üniversitesi Hemşirelik Yüksekokulu Dergisi 1992;456-461.

24. Çam O, Akgün E, Gümüş BA, Bilge A, Keskin UG. Bir ruh sağlığı hastanesinde çalışan hekim ve hemşirelerin klinik ortamlarını değerlendirmeleri ile iş doyumları arasındaki ilişkinin incelenmesi. Anadolu Psikiyatri Dergisi 2005;6:213-220.

25. Çimen M, Ergin C. Türk Silahlı Kuvvetleri sağlık personelinin tükenmişlik düzeylerinin incelenmesi. Gülhane Tıp Dergisi 2001;43:169-176.

26. Günüşen NP, Ustün B. An RCT of coping and support groups to reduce burnout among nurses. Int Nurs Rev 2010;57:485-492.

27. Tunç T. Doktor ve hemşirelerde tükenmişlik ile rol çatışması ve rol belirsizliği arasındaki ilişki, Tez danışmanı; Doç. Dr. Rana Özen Kutanis, Özkan Matbaacılık, Ankara:2007.

28. Çalışkan Z. İş tatmini: Malatya'da sağlık kuruluşları üzerine bir uygulama. Doğu Anadolu Bölgesi Araştırmaları Dergisi 2005;4:9-18.

29. Demir N. Örgüt kültürü ve iş tatmini. Türmen Kitabevi, İstanbul 2007;197-279.

30. Erçevik R. Hemşirelerde işe bağlı gerginlik, tükenmişlik düzeyleri ve etkileyen faktörler. Haliç Üniversitesi Sağlık Bilimleri Enstitüsü, Danışman: Yard. Doç. Dr. Nefise Bahçecik. Yayınlanmamış Yüksek Lisans Tezi, İstanbul:2010.

31. Güleç D. Rotasyon İle Çalışan Hemşirelerde İş Doyumunun Belirlenmesi. Marmara Üniversitesi Sağlık Bilimleri Enstitüsü. Yüksek Lisans Tezi, İstanbul: 2009

32. Kebapcı A, Akyolcu N. Acil birimlerde çalışan hemşirelerde çalışma ortamının tükenmişlik düzeylerine etkisi. Türkiye Acil Tıp Dergisi 2011;11:59-67.

33. Keskin G, Yıldırım GÖ. Hemşirelerin Kişisel Değerlerinin ve İş Doyumlarının İncelenmesi. Ege Üniversitesi Hemşirelik Yüksekokulu Dergisi 2006;22:119-133.

34. Sinat Ö. Psikiyatri Kliniklerinde Çalışan Hemşirelerde Tükenmişlik Düzeyinin Araştırılması, İstanbul Üniversitesi Sağlık Bilimleri Enstitüsü, Psikiyatri Hemşireliği ABD, Yüksek Lisans Tezi, İstanbul:2007.

35. Altuğ İY, Susur A, Keskin S, Balcı Y, Seber G. Osmangazi Üniversitesi Tıp Fakültesi'nde çalışan hekimlerde tükenmişlik düzeyleri, Osmangazi Tıp Dergisi 2006;28:91-101.

36. Arcak R, Kasımoğlu E. Diyarbakır merkezdeki hastane ve sağlık ocaklarında çalışan hemşirelerin sağlık hizmetlerindeki rolü ve iş memnuniyetleri. Dicle Tıp Dergisi 2006;33:23-30.

37. Ebrinç S, Açıkel C, Başoğlu C, Çetin M, Çeliköz B. Yanık merkezi hemşirelerinde anksiyete, depresyon, iş doyumu, tükenme ve stresle başa çıkma: karşılaştırmalı bir çalışma. Anadolu Psikiyatri Dergisi 2002;3:162-168.

ORIGINAL RESEARCH

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The Effect of Nebivolol on Subarachnoid Hemorrhage-induced Vasospasm in the Rabbit

Tavşanlarda Oluşturulan Subaraknoid Kanama Sonrası Gelişen Vazospazmda Nebivololün Etkisi

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Abstract

Objective: This study aimed to investigate the vasorelaxation effect of nebivolol on vasospasm in the rabbit model of subarachnoid hemorrhage (SAH).

Method: Single-hemorrhage model in the rabbit SAH was employed. SAH was induced in animals by cisterna manga injection of 4 mL autologous blood. Thirty-two animals were categorized into four groups: 1) control group (no SAH), 2) SAH group, 3) SAH + solvent infused group and 4) SAH + nebivolol treatment group. Forty-eight hours after SAH-induction, rabbits in group 3 and in 4 were received solvent or nebivolol, respectively. Nebivolol (0.073 mg/kg) was administered via the vertebral artery in 5 minutes. Digital subtraction angiography was performed at forty-nine hour following SAH-induced groups. The diameters of basilar arteries in four groups were measured at three points, and the average of the measurements was accepted as a consecutive result.

Results: SAH-induced rats demonstrated severe vasospasm on day 2. Angiographic vasospasm was present in group 2 (SAH only), and in 3 (SAH plus solvent). Animals in group 4 (SAH plus nebivolol) and group 1 (control), respectively, demonstrated the largest diameters of basilar arteries. Animals treated with nebivolol has reached eighty-eight percent of the value in the control group 1. There was no statistical difference between the control group and SAH plus nebivolol treatment group ($p>0.05$). However, the difference was obtained between the groups SAH plus solvent and SAH plus nebivolol treatment ($p<0.01$).

Conclusion: Vasospasm of the rat basilar arteries were significantly reversed by delivery of nebivolol directly into the constricted basilar artery. That drug used in cardiovascular disease may serve as a new treatment in the management of SAH patients.

Keywords: Nebivolol, subarachnoid hemorrhage, rabbit, vasospasm

Öz

Amaç: Günümüzde, subraknoid kanama (SAK) sonrası ortaya çıkan vazospazm halen etkin olarak tedavi edilememektedir. β-1 reseptör antagonisti olan nebivololün, deneysel ve klinik araştırmalarda vazodilatasyon etkisi kanıtlanmıştır. Bu çalışmada, nebivololün SAK sonrası gelişen deneysel vazospazmın tedavisindeki etkinliği araştırılmıştır.

Yöntem: Çalışmada, 32 adet Yeni Zelanda türü tavşan eşit olarak 4 gruba ayrıldı: 1) Kontrol grubu, 2) SAK grubu, 3) SAK + solvent verilen grup ve 4) SAK + nebivolol tedavi grubu. İkinci, 3. ve 4. gruptaki tavşanlarda tek kanamalı SAK modeli uygulandı. Tüm deneklere dijital anjiyografi yapıldı. Üçüncü ve 4. gruptaki tavşanlarda SAK sonrası 48. saatte transfemoral yöntemle Arteria vertebralis içine yerleştirilen kateterle 1 mL solvent (nebivololün içinde çözünmesinde kullanılan solüsyon) veya 1 mL hacim içinde 0.073 mg/kg dozda nebivolol infüzyonu yapıldı. SAH uygulanan 2., 3. ve 4. grup deneklere SAK uygulamasının 49. saatinde ve 1. gruptaki deneklere dijital anjiyografi yapıldı.

Bulgular: Baziler arter ortalama çapları grup 1'de 0,64 mm, grup 2'de 0,33 mm, grup 3'te 0,37 mm ve grup 4'te 0,56 mm olarak saptandı. İkinci gruptaki deneklerde SAK sonrası 48. saatte yapılan dijital anjiyografi incelemesinde ağır vazospazm geliştirdiği saptandı. Baziler arter çapları dikkate alındığında, istatistiksel olarak grup 1 ve 4 sonuçları arasında anlamlı fark saptanmadı ($p>0,05$). Üçüncü grupta solvent verilen deneklerde ağır vazospazm oluşumu saptanmasına ragmen, dördüncü grupta nebivololün SAK'ye bağlı vazospazm gelişimini etkin olarak tedavi ettiği saptandı ($p<0.01$).

Sonuç: Bu çalışmada elde edilen sonuçlar, β-1 reseptör antagonisti olan nebivololün SAK sonrası ortaya çıkan vazospazmın tedavisinde yeni bir seçenek olabilecegini ortaya koymuştur.

Anahtar kelimeler: Nebivolol, subaraknoid kanama, tavşan, vazospazm

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Introduction

The patients with cerebral vasospasm is a disturbance of the cerebral arteries following subarachnoid hemorrhage (SAH). A prolonged narrowing of the arteries encased in blood clots causes decreasing of blood flow in the distribution of arterial narrowing (1,2). Developing delayed ischemic neurological deficit (DIND) can be permanent, or transient. Nimodipine is the only agent to reverse limitedly vasoconstriction-induced cerebral vasospasm and related DIND. Nowadays, the patients suffered DIND have a poor outcome as almost 50% ratio (1).

β-blockers called as β-adrenergic blocking agents have been using in the treatment of some cardiovascular diseases. They reduce sympathetic nervous system activity through blockade of adrenergic receptor subtypes including β1, β2, and β3 (3). Based on historical development, there are 3 different available generations of β-blockers. The first one is non-selective β-blockers (eg, propranolol, sotalol), the second one is β-1-selective ("cardioselective") (eg, metoprolol, bisoprolol, atenolol), and the third generation shows β-1-selective activity and vasorelaxant effects (eg, carvedilol and nebivolol).

Substantial evidence showed that nebivolol could have significantly vasomotor property on the vasculature in different animal species and in humans (4,5,6,7,8). Carvedilol has vasorelaxant effect mediated by α-adrenoreceptor (AR) blockade (3). The vasodilatative effect might be organ/tissue specific, and unrelated to β-1 receptor and α-AR mediated action (9,10). *In vitro* studies demonstrated that the mechanism was associated with endothelium-dependent (6,8) or endothelium-independent (7,11). Molecular studies have been investigating to identify signaling pathway networks. It was obtained that endothelial nitric oxide synthase (eNOS), β3-AR, reactive oxygen species (ROS), asymmetric dimethyl arginine (ADMA), ATP stimulated P2Y-receptors and platelet-derived growth factor-β (PDGF-β) could modify the cell-signaling (8,11,12,13,14).

The purpose of the current study was to investigate whether the influence of nebivolol on the vasospasm following SAH. We thought that if vasoconstriction subsequent to SAH might be ameliorated with this agent, it would be the chance of a new treatment.

Material and Methods

Animals

Thirty-two, male or female New Zealand white rabbits, weighing from 2.9-3.6 kg were used in this study. Animals were housed at 22°C with lights on from 07:00 to 19:00 daily. All animals had free access to food and water. All surgical procedures were performed under sterile conditions at the experimental laboratory of the Department of Neurosurgery at İstanbul Faculty of Medicine.

Experimental groups

The experimental rabbit population was randomly divided into four groups: the control group (n=8), the SAH group (n=8), the SAH + solvent group (n=8) and the SAH + nebivolol (in the solvent) treatment group (n=8). The control and SAH group has not received any treatment while the last two groups received solvent or nebivolol (in the solvent) treatment, respectively.

Treatments in the last two groups were begun at 48th following SAH induction. By a catheter placed in the A.vertebralis, the solvent or nebivolol infusion was continued for 5 minutes. After fifty-five minutes break, digital subtraction angiography (DSA) was performed in SAH only and SAH plus treated groups at the 49th hour.

Preparation of stock solutions

The solvent is consist of a mixture of distilled water 80% and polyethylene glycol 20%. The stock solution of nebivolol is prepared in a solvent as 0.2 mg/mL. One mL of nebivolol in the solvent solution or 1 mL of the solvent solution were given in to via the vertebral artery and perfused at a flow rate of 0.2 mL/min.

Rabbit model of SAH

Anesthesia in the rabbit was induced with ketamine (50 mg/kg, intramuscularly) and xylazine (10 mg/kg, intramuscularly). After that, rabbits were mechanically ventilated (SW-ventilator, GF. Palmer, London, England). Inspired gas was containing 21% O_2 and 79% with room air and with a tidal volume of 12-18 mL, respiratory rate of 12-14 breaths/minute. Oxygen saturation (SpO_2), blood pressure and exhaled CO_2 ($EtCO_2$) were monitored.

The auricular artery was catheterized (with 20 G vascular catheter), for blood pressure monitoring and arterial blood sampling. In SAH group, the atlantooccipital membrane was exposed through an occipitocervical midline incision. After the withdrawal of 1 mL CSF, 4 mL of fresh autologous arterial blood was injected into the cisterna magna. Thereafter, rabbits were placed in a head-down prone position for 15 minutes. Then, the incision was sutured and returned to the cage box.

Cerebral angiography and evaluation of vasospasm

The basilar artery was assessed by DSA in all groups. Animals were anesthetized with using the same method as described above. DSA was performed in angiography unit of Radiology Department in İstanbul Faculty of Medicine (Philips Integris V. 3000). The femoral artery was catheterized with a no. 4.0 French (Cordis, Johnson and Johnson, Florida, USA). Thereafter, continued with a no. 3.0 French of microcatheter (tracker, Boston scientific, California, USA). Under fluoroscopy control, the tip of microcatheter was placed into the left subclavian artery and 1 mL of contrast medium injected Iopamidol (Iopamiro 300 mg iodine/mL, Bracco, s.p.a, Milano; ITALY). For measurements of the basilar artery's diameter, a radio positive metal was positioned under the animal's head as a reference marker of magnification. Serial angiographic imaging was collected. The diameter of the basilar artery was measured at three points including upper, medial and lower portion and recruited average value (Figure 1).

Statistical Analysis

The data in this research was measured as the differences of mean values (arterial diameter) analyzed with one-way variance analysis (One-way ANOVA) and post-hoc Tukey test. "P" value of less than 0.05 was expressed statistically significant.

Results

Two animals (6.25%) have died from anesthesia-induced complications in an early stage. The same number of animals were added.

The diameter of the basilar arteries was 0.64 mm in group 1 (no SAH), 0.33 mm in group 2, 0.37 mm in group 3 and 0.56 mm in group 4 (Figure 2). The average decreases in basilar arteries compared to the control group was in the last three groups as 49, 43 and 13%, respectively. Effective vasospasm was produced in group 2 (SAH only) and 3 (SAH + solvent group). Regarding arterial narrowing, there was no statistical difference between group 2 and 3. The solvent solution had no effect on reversing of induced vasospasm. There was no statistical difference between group control and group SAH plus nebivolol treatment ($p>0.05$). However, the difference was obtained between group SAH plus solvent and group SAH plus nebivolol treatment ($p<0.001$). So, there was no doubt that impact was belonged to nebivolol, not to the solvent solution.

Mean blood pressure (MAP) in group 4 was decreased ~15%, started forty-five minutes after infusion of nebivolol, normalized at the third hour. Heart rate (HR) in group 4 was decreased 12%, started fifteen minutes after infusion of nebivolol, normalized at the sixth hour. No significant changes in MAP and HR were observed in other groups. We have preferred short time infusion of nebivolol. In our

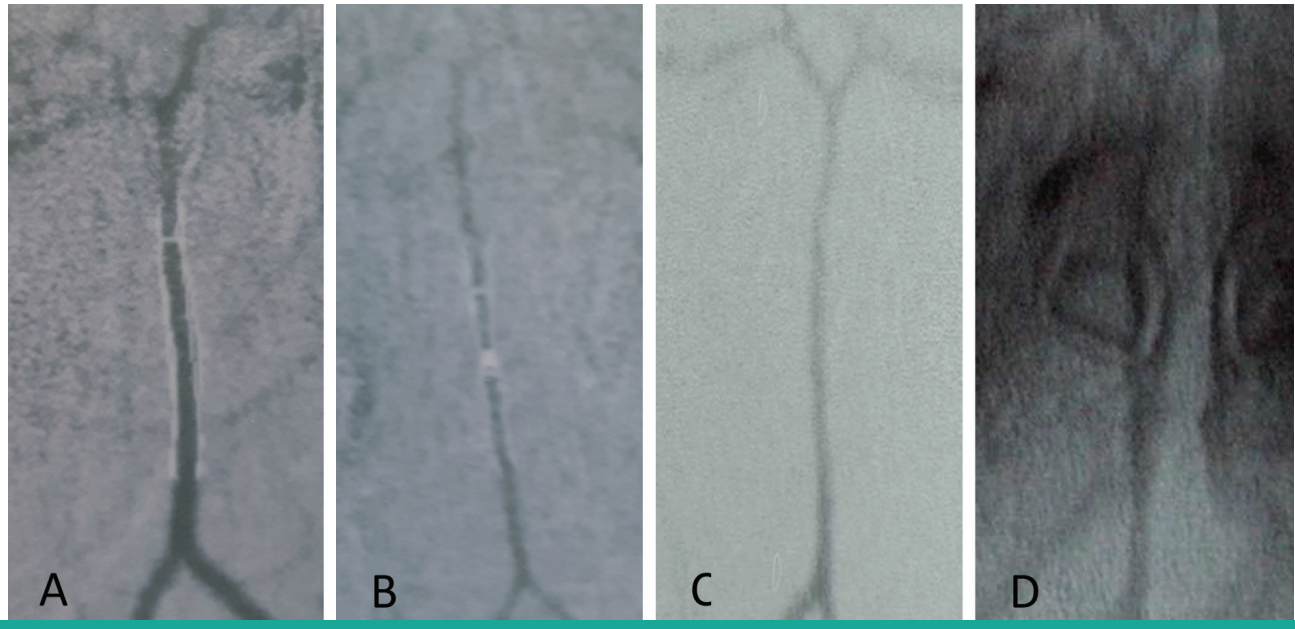

Figure 1. Digital subtraction angiography: A) Control, B) SAH, C) SAH plus the solvent, D) SAH plus nebivolol. Right the vertebral artery injection revealed severe vasospasm in the group SAH and SAH plus the solvent, and mild vasospasm in group SAH plus nebivolol

SAH: Subarachnoid hemorrhage

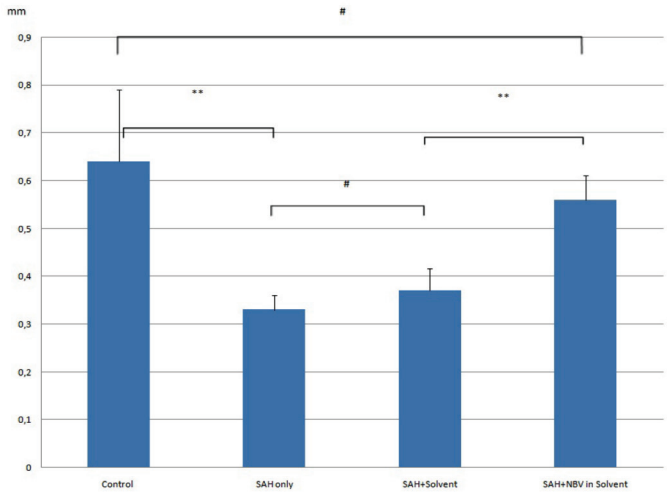

Figure 2. The diameters of the basilar arteries measured by angiography. The diameter of the basilar arteries was 0.64 mm in group 1 (no SAH), 0.33 mm in group 2, 0.37 mm in group 3 and 0.56 mm in group 4. There was no statistical difference between group control and group SAH plus nebivolol treatment (p>0.05). Group of SAH plus nebivolol treatment's result is significantly different from group 2 and 3 [(#non-significant (p>0.05), **very significant (p<0.001)]

experiment which prevented to occur a big issue. If infusion time is prolonged in the future, that problem needs to be resolved.

Discussion

Rats, cats, rabbits, dogs, and primates are used as the model for SAH-induced vasospasm (2). SAH is induced with different volumes of blood by using different surgical methods. The majority of animal models of SAH can create an effective degree of vasospasm. However, they did mostly not mimic pathological and pathophysiological changes seen in human (2). So, all models can provide a limited amount of data extrapolated to human. Although suitable animal for this purpose is dog and primate. Using those animal models are getting harder because of ethic and costing problems. In this experiment, we have chosen the rabbit model of SAH. This model exerts biphasic pattern of vasospasm (15) and morphological changes in constricted arteries (16) similar to observed in humans. Another advantage is to be easier for performing DSA. In our current study, we have created angiographic vasospasm in the rabbit model of SAH to test the nebivolol's effect.

From the literature review, nebivolol has an impact as the widening of constricted vasculature (4,6,9). Mechanisms of the action of nebivolol-induced vasodilation have occurred in several pathways including the endothelial-dependent and -independent manner. The main mechanism due to the action of nebivolol is accepted by evoking NO-induced vasorelaxation. *In vitro* studies, nebivolol -induced vasodilation effect was abolished by NOS inhibitor or by removal of or damage to the endothelium (6). Its effect was could not be reversed by the α-receptor inhibitor, the cyclooxygenase inhibitor or by serotonin inhibitor. Another study showed that there was a sustained increase in eNOS expression resulted in induced NO-dependent relaxation (8). Similar results were obtained as *in vivo* studies that NOS inhibitors blocked NO-mediated venous relaxation of the forearm (4), and of forearm arterial system (5) in humans.

ATP stimulated P2Y-receptor and β3-AR activation may be one of the underlying vasodilation by NO-induced. Exposure of cultured human endothelial cells to nebivolol and addition of external ATP to the medium results in NO release (14). Moreover, ATP produces fast-acting NO release than nebivolol's. ATP-activated P2Y receptor leads to activation of guanyl cyclase by the eNOS (14). If the P2Y receptor activity were tightly blocked by the selective antagonist, the availability of NO was significantly decreased. Therefore, it is criticized that ATP output from endothelial cells has a major role in increasing of nebivolol-induced NO (17).

Asymmetric dimethyl arginine (ADMA) is the endogenous inhibitor of NOS. Elevation of ADMA is associated with low levels of NO leading to endothelial dysfunction (18). Accumulation of ADMA cause to decrease NO amount, consequently. It might contribute to the vasospasm following SAH. Nebivolol induces the dimethyl arginine dimethyl amino hydrolase 2 (DDAH2) activity that increases protein breakdown and thereby reduce the production of ADMA (19). That pathway may be partially complementary to the occurrence of the vasoactive impact. In this regard, additional studies are needed.

Newly identified mechanism of vasorelaxant effect by nebivolol is the β3-AR pathway. It was revealed that β3-AR agonists have produced vasodilation in different animal species (9,10). Many studies were performed to characterize the vasorelaxant effect of β3-AR elicited endothelial-dependent or -independent manner. In an endothelial-dependent manner, the endothelium is critically required for its vascular response. β3-AR-induced relaxation was substantially decreased after endothelium denied which suggests that those receptors were mainly in vascular endothelium (11). Administration of the β3-AR antagonist disrupted the enzymatic function of eNOS

activity and inhibited NO release. The endothelium-dependent effect occurs via the NOS/NO/cGMP signaling pathway, respectively. The other pathway is the endothelium-independent signaling road. In rat thoracic aorta, the source of NO generated from the endothelium-independent mechanism could not be directly related to NOS (9). Because NOS inhibitors have failed an increase of NO production while achieved with selective β3-AR inhibitors. AR-induced relaxation of rat abdominal aorta has mostly used cyclic adenosine monophosphate (cAMP) in an independent pathway (7). Recent studies have shown that K + channel-mediated vasodilatation including BKCa, KATP, and KV is activated by the β3-AR (7,11). In human endothelium, the NO synthase - independent relaxation was completely inhibited by K + channel inhibitors (11). In another study, dose-dependent relaxation effect was encountered in the canine arterial rings with intracellular high-level cAMP levels in K + channel studies. Regarding the study of mechanism, the adenylate cyclase/cAMP pathway is used in endothelium-independent mechanism related β3-AR. It should be another pathway of NO production by β3-ARs.

Another determinant factor in the pathophysiology of vasospasm is ROS. Intracellular ROS formation causes leading to oxidative stress, cell damage, and apoptosis (20). Increased ROS levels in the brain have been shown to be increased following SAH (21). A large amount of ROS acts scavenging of NO resulted in decreased NO availability. It may cause vascular dysfunction, which is parallel to the development of cerebral vasospasm (22). In cell cultured study, it has been shown that nebivolol is highly sensitive to act as ROS scavenger (12). In addition, nebivolol and its hepatic metabolites effectively alleviated oxidative stress, markedly decreased the ROS concentration (23). In oxidative stress condition after SAH, ROS defense mechanisms including superoxide dismutase and glutathione peroxidase were activated. The existence of an increased level of both enzymes in patients with cerebral vasospasm was found (24). Nebivolol may exert anti-vasospastic effects on cerebral vasospasm obtained current study through changing of related enzyme's activity. In some cardiovascular disease, nebivolol could also substantially upregulate some ROS related genes (25). Further studies are needed.

Cerebral vasospasm involves multiple processes including inflammation, vascular proliferation, and matrix alteration (13). Promoting to vascular remodeling, cell growth and proliferation of vascular smooth muscle cells (VSMC) result in a restricted or a permanent stopping of blood flow. Recently, it has been reported that PDGF-β, proliferating cell nuclear antigen and α-smooth muscle actin in VSMCs was increased after SAH (13). PDGF has the ability to create vasoconstriction in cerebral arteries (26). Apoptosis and proliferation induced in coronary artery VSM and endothelial cells were significantly inhibited concentration-dependently by nebivolol in human (27). The effect of nebivolol may be due to the impairing of PDGF signaling (27,28). In addition, nebivolol substantially prevented neo-intimal thickening identified after balloon-injured carotid arteries in the rat model (29). In a study, nebivolol inhibits pro-inflammatory genes expression as VCAM-1, E-selectin, MCP-1 by modulating NF-B dependent genes (29). In human VSMC exposed to nebivolol, changes of proinflammatory cytokines and the increase of NO was obtained (28). Therefore, it was thought that the regulation of eNOS expression by nebivolol inhibited NF-kappa B. Furthermore, the elevated neutrophil-lymphocyte ratio (NLR) is accepted as an inflammation biomarker for some vascular disease such as coronary heart disease, hypertension. Nebivolol has a strong impact on reducing NLR (30).

Platelets are activated by contact with exposed collagen and aggregate together at the injured sites leading to the formation of a thrombus. The NOS is present in platelets which is a key role for aggregation inhibition. It was shown that nebivolol exerted to prevent platelet aggregation via activating NOS which caused NO increase (31). It could be hypothesized that thrombus deposition could cause low-level production of NO that might increase the degree of vasospasm.

Conclusion

The advances in molecular biology make easier to understand the pathophysiology of SAH-induced vasospasm in human. Improving experimental SAH models provides significant contributions to the multifactorial nature of the disease. However, all experimental studies have some limitations. Unfortunately, there is still no acceptable treatment method.

The results of the current study provide important data that nebivolol treated angiographic vasospasm following SAH in rabbits. In summary, nebivolol might alleviate SAH-induced cerebral vasospasm in human and may contribute improvement of patient outcomes in the future.

Ethics

Ethics Committee Approval: This study was done as a thesis almost 20 years ago. There were not ethical committees of today in those times. The subjects used in the study was obtained from İstanbul University DETAM after the thesis had been given from the lecturer; it had been approved by the department academical committee.

Informed Consent: Experimental study.

Peer-review: Externally peer-reviewed.

References

1. Hop JW, Rinkel GJ, Algra A, van GJ. Case-fatality rates and functional outcome after subarachnoid hemorrhage: a systematic review. Stroke 1997;28:660-664.
2. Marbacher S, Gruter B, Schopf S, Croci D, Nevzati E, D'Alonzo D, et al. Systematic review of ın vivo animal models of subarachnoid hemorrhage: species, standard parameters, and outcomes. Transl Stroke Res 2018;12. doi: 10.1007/s12975-018-0657-4.
3. do Vale GT, Ceron CS, Gonzaga NA, Simplicio JA, Padovan JC. Three Generations of beta-blockers: History, Class Differences and Clinical Applicability. Curr Hypertens Rev 2019;15:22-31.
4. Bowman AJ, Chen CP, Ford GA. Nitric oxide mediated venodilator effects of nebivolol. Br.J.Clin.Pharmacol. 1994;38:199-204.
5. Cockcroft JR, Chowienczyk PJ, Brett SE, Chen CP, Dupont AG, Van NL, et al. Nebivolol vasodilates human forearm vasculature: evidence for an L-arginine/NO-dependent mechanism. J Pharmacol Exp Ther 1995;274:1067-1071.
6. Gao YS, Nagao T, Bond RA, Janssens WJ, Vanhoutte PM. Nebivolol induces endothelium-dependent relaxations of canine coronary arteries. J Cardiovasc Pharmacol 1991 Jun;17:964-969.
7. Matsushita M, Tanaka Y, Koike K. Studies on the mechanisms underlying beta-adrenoceptor-mediated relaxation of rat abdominal aorta. J Smooth Muscle Res 2006;42:217-225.
8. Parenti A, Filippi S, Amerini S, Granger HJ, Fazzini A, Ledda F. Inositol phosphate metabolism and nitric-oxide synthase activity in endothelial cells are involved in the vasorelaxant activity of nebivolol. J Pharmacol Exp Ther 2000;292:698-703.
9. Ignarro LJ, Byrns RE, Trinh K, Sisodia M, Buga GM. Nebivolol: a selective beta(1)-adrenergic receptor antagonist that relaxes vascular smooth muscle by nitric oxide- and cyclic GMP-dependent mechanisms. Nitric Oxide 2002;7:75-82.
10. Shen YT, Cervoni P, Claus T, Vatner SF. Differences in beta 3-adrenergic receptor cardiovascular regulation in conscious primates, rats and dogs. J.Pharmacol Exp Ther 1996;278:1435-1443.
11. Dessy C, Moniotte S, Ghisdal P, Havaux X, Noirhomme P, Balligand JL. Endothelial beta3-adrenoceptors mediate vasorelaxation of human coronary microarteries through nitric oxide and endothelium-dependent hyperpolarization. Circulation 2004;110:948-954.
12. de Groot AA, Mathy MJ, van Zwieten PA, Peters SL. Antioxidant activity of nebivolol in the rat aorta. J Cardiovasc Pharmacol 2004;43:148-153.
13. Duan H, Zhang J, Li L, Bao S. Effect of simvastatin on proliferation of vascular smooth muscle cells during delayed cerebral vasospasm after subarachnoid hemorrhage. Turk Neurosurg 2016;26:538-544.
14. Mason RP, Jacob RF, Corbalan JJ, Szczesny D, Matysiak K, Malinski T. The favorable kinetics and balance of nebivolol-stimulated nitric oxide and peroxynitrite release in human endothelial cells. BMC Pharmacol Toxicol 2013;14:48.
15. Chan RC, Durity FA, Thompson GB, Nugent RA, Kendall M. The role of the prostacyclin-thromboxane system in cerebral vasospasm following induced subarachnoid hemorrhage in the rabbit. J Neurosurg 1984;61:1120-1128.
16. Liszczak TM, Black PM, Tzouras A, Foley L, Zervas NT. Morphological changes of the basilar artery, ventricles, and choroid plexus after experimental SAH. J Neurosurg 1984;61:486-493.
17. Jankowski M, Szczepanska-Konkel M, Kalinowski L, Angielski S. Cyclic GMP-dependent relaxation of isolated rat renal glomeruli induced by extracellular ATP. J Physiol 2001;530(Pt 1):123-130.
18. Garbin U, Pasini AF, Stranieri C, Manfro S, Boccioletti V, Cominacini L. Nebivolol reduces asymmetric dimethylarginine in endothelial cells by increasing dimethylarginine dimethylaminohydrolase 2 (DDAH2) expression and activity. Pharmacol Res 2007;56:515-521.
19. Hermenegildo C, Medina P, Peiro M, Segarra G, Vila JM, Ortega J, Lluch S. Plasma concentration of asymmetric dimethylarginine, an endogenous inhibitor of nitric oxide synthase, is elevated in hyperthyroid patients. J Clin Endocrinol Metab 2002;87:5636-5640.
20. Redza-Dutordoir M, Averill-Bates DA. Activation of apoptosis signalling pathways by reactive oxygen species. Biochim Biophys Acta 2016;1863:2977-2992.
21. Erdi F, Keskin F, Esen H, Kaya B, Feyzioglu B, Kilinc I, et al. Telmisartan ameliorates oxidative stress and subarachnoid haemorrhage-induced cerebral vasospasm. Neurol Res 2016;38:224-231.
22. Mori T, Nagata K, Town T, Tan J, Matsui T, Asano T. Intracisternal increase of superoxide anion production in a canine subarachnoid hemorrhage model. Stroke 2001;32:636-642.
23. Evangelista S, Garbin U, Pasini AF, Stranieri C, Boccioletti V, Cominacini L. Effect of DL-nebivolol, its enantiomers and metabolites on the intracellular production of superoxide and nitric oxide in human endothelial cells. Pharmacol Res 2007;55:303-309.
24. Gaetani P, Pasqualin A, Baena R, Borasio E, Marzatico F. Oxidative stress in the human brain after subarachnoid hemorrhage. J Neurosurg 1998;89:748-754.
25. Garbin U, Fratta PA, Stranieri C, Manfro S, Mozzini C, Boccioletti V, et al. Effects of nebivolol on endothelial gene expression during oxidative stress in human umbilical vein endothelial cells. Mediators Inflamm 2008;2008:367590.
26. Zhang ZW, Yanamoto H, Nagata I, Miyamoto S, Nakajo Y, Xue JH, Iihara K, Kikuchi H. Platelet-derived growth factor-induced severe and chronic vasoconstriction of cerebral arteries: proposed growth factor explanation of cerebral vasospasm. Neurosurgery 2010;66:728-735.
27. Brehm BR, Wolf SC, Bertsch D, Klaussner M, Wesselborg S, Schuler S, et al. Effects of nebivolol on proliferation and apoptosis of human coronary artery smooth muscle and endothelial cells. Cardiovasc Res 2001;49:430-439.
28. Wolf SC, Sauter G, Jobst J, Kempf VA, Risler T, Brehm BR. Major differences in gene expression in human coronary smooth muscle cells after nebivolol or metoprolol treatment. Int J Cardiol 2008;125:4-10.

29. Wolf SC, Sauter G, Preyer M, Poerner T, Kempf VA, Risler T, et al. Influence of nebivolol and metoprolol on inflammatory mediators in human coronary endothelial or smooth muscle cells. Effects on neointima formation after balloon denudation in carotid arteries of rats treated with nebivolol. Cell Physiol Biochem 2007;19:129-136.

30. Hussain M, Saeed M, Babar MZM, Atif MA, Akhtar L. Nebivolol attenuates neutrophil lymphocyte ratio: a marker of subclinical ınflammation in hypertensive patients. Int J Hypertens 2017;2017:7643628.

31. Falciani M, Rinaldi B, D'Agostino B, Mazzeo F, Rossi S, Nobili B, et al. Effects of nebivolol on human platelet aggregation. J Cardiovasc Pharmacol 2001;38:922-929.

ORIGINAL RESEARCH

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Cepstral Peak Point Analyses of Patients Recovering from Supraglottic Laryngectomy

Supraglottik Larenjektomiden İyileşen Hastaların Cepstral Pik Nokta Analizleri

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Abstract

Objective: The aim of this study is to evaluate smoothed cepstral peak point and laryngostrobosopic results in patients who underwent supraglottic laryngectomy.

Method: Ten patients who underwent transcervical supraglottic laryngectomy with bilateral modified radical neck dissection, and who completed at least 12 months of follow-up, were included. All patients underwent laryngostroboscopic evaluation at study commencement; glottal closure and mucosal wave pattern were examined. Voice records were taken at fundamental frequency and smoothed cepstral peak point were analysed. Voice handicap index-10 was requested to be completed. Ten healthy individual constituted control group. Results were compared.

Results: The mean smoothed cepstral peak points were 1.53-5.91 in the supraglottic laryngectomy group and 4.6-6.06 in controls, a significant difference. The fundamental frequency ranged from 174.49 to 197.25 Hz in the supraglottic laryngectomy group and from 118.57 to 197.61 Hz in the control group, also a significant difference. Laryngostroboscopic evaluation revealed no significant between-group differences in closure, but the mucosal waves differed significantly. Voice handicap index was significantly lower in supraglottic laryngectomy patients.

Conclusion: Supraglottic laryngectomy reduces smoothed cepstral peak point and affects the mucosal wave, reducing voice quality.

Keywords: Cepstral peak point, supraglottic laryngectomy, laryngostroboscopy, vocal quality, voice handicap index

Öz

Amaç: Bu çalışmanın amacı, supraglottik larenjektomi geçiren hastalarda kepstral pik noktası ve laringostroboskopik sonuçları incelemektir.

Yöntem: Transservikal supraglottik larenjektomi ve bilateral modifiye boyun diseksiyonu olmuş, en az 12 ay takip edilmiş 10 hasta çalışmaya dahil edildi. Bütün hastalar çalışmanın başlangıcında laringostroboskopiyle incelendi; glottik kapanış ve mukozal dalga paternleri incelendi. Temel frekanslarda ses kayıtları alındı ve kepstral pik noktası analiz edildi. Voice handicap index-10 tamamlanması istendi. On sağlıklı bireyden kontrol grubu oluşturuldu. Sonuçlar karşılaştırıldı.

Bulgular: Supraglottik larenjektomi grubunda ortalama kepstral pik noktası 1,53-5,91, kontrol grubunda ise 4,6-6,06 olarak bulundu, sonuçlar istatistiksel olarak anlamlı bulundu. Supraglottik larenjektomi grubunda temel frekans 174,49 ile 197,25 Hz arasında, kontrol grubunda ise 118,57 ile 197,61 Hz arasında değişmiştir ve sonuçlar istatistiksel olarak anlamlı bulunmuştur. Laringostroboskopik incelemede glottik kapanışta iki grup arasında anlamlı fark bulunmazken, mukozal dalgalarda anlamlı fark saptandı. Voice handicap index, supraglottik larenjektomi hastalarında anlamlı olarak daha düşük bulunmuştur.

Sonuç: Supraglottik larenjektomi, kepstral pik noktasını düşürürken, ses kalitesini düşürerek mukozal dalgaları etkiler.

Anahtar kelimeler: Kepstral pik noktası, supraglottic larenjektomi, laringostroboskopi, ses kalitesi, voice handicap index

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Introduction

Supraglottic laryngectomy (SL) is a surgical procedure that preserves the vocal, deglutition, and respiratory functions of the larynx (1,2). The epiglottis, aryepiglottic plica, and ventricular bands are removed during standard SL; the base of the tongue, the arytenoid cartilage, and the pyriform sinus are resected during extended SL depending on the extent of tumour invasion (3). Loss of vocal function following laryngectomy has been a major concern since laryngectomy was first introduced. Intelligible speech increases quality of life and enhances return to normal activities. The supraglottic larynx plays roles in voice production and articulation and voice quality is affected by removing it (4). Moreover, resection of the tongue base or arytenoid cartilage may have additional effects on voice quality (5).

According to Hillenbrand et al., (6) cepstrum was described as a discrete Fourier transform of the logarithm power spectrum; i.e., it was a log power of a log power spectrum. When a linear regression line representing the average sound energy is drawn through the cepstrum, the distance from the cepstral peak to this line is termed the cepstral peak prominence (CPP) (7,8), a measure of the extent of harmonic organisation (7). Another such measure is the smoothed CPP (sCPP; the distance between the first harmonic peak and the point of the same frequency that lies on the regression line through the smoothed cepstrum). The logic is that a more periodic voice signal exhibits a better-defined harmonic configuration (i.e., a more harmonic spectrum), and the cepstral peak is thus more prominent. Hillenbrand et al., (6) and Hillenbrand and Houde (7) showed that the CPP was reliable and valid when used to evaluate voice quality (8). The CPP integrates waveform measures with periodicity perturbations in amplitude, frequency, and/or noise (9). Although vocal quality is of major concern to laryngectomy surgeons, only a few studies have analyzed sCPP after partial laryngectomies (10). We analyzed sCPPs following SL.

Material and Methods

This study adhered to all relevant tenets of the Declaration of Helsinki and International Review Board approval was obtained from University of Health Sciences İstanbul Okmeydanı Training and Research Hospital Ethics Committee. A consent to publish was obtained from all the participants. Ten patients who underwent transcervical SL with bilateral modified radical neck dissection between 2010 and 2017, and who completed at least 12 months of follow-up, were included. Vocal parameters do not change significantly after 12 months (11). Ten healthy individuals including one female, matched by age and sex, constituted the control group. No patients had undergone an extended procedure. One patient was female and the others were male. Four underwent radiotherapy after surgery. We excluded patients who had undergone extended procedures, who received additional treatment because of recurrence, and who had cardiopulmonary problems that might affect voice quality.

All patients underwent laryngostroboscopic evaluation at study commencement; glottal closure and mucosal wave pattern were examined. Laryngostroboscopic evaluation was performed with 70 degree rigid telescope (Karl Storz Pulsar II, Tuttingen Germany). All voices were recorded using an AKG D5 (AKG, Vienna, Austria) dynamic microphone and a Lexicon Alpha external sound card (Lexicon by Harman, USA). The microphone was placed 5 cm from the lips, and after deep inspiration, patients were told to sound the vowel "a" in Turkish for as long as possible. Praat software (version 4.4.13; Boersma and Weenink, University of Amsterdam, Amsterdam, the Netherlands) was used to analyse recordings and the Z-tool (James Hillenbrand Western Michigan University) was employed for sCPP analyses.

Statistical Analysis

The results were compared using The Statistical Package for the Social Sciences (SPSS) version 22 software for Windows (SPSS Inc., Chicago, IL, USA). As subject numbers were limited, we employed the Mann-Whitney U test for comparisons.

Results

The mean age was 60.3±2.49 years in the SL group and 57.6±4.22 years in the control group; these did not differ significantly (p=0.209). The sCPPs were 1.53-5.91 in the SL group and 4.6-6.06 in controls, a significant difference (Table 1) (Figure 1,2). The fundamental frequency (Fo) ranged from 174.49 to 197.25 Hz in the SL group and from 118.57 to 197.61 Hz in the control group, also a significant difference (Table 1). Laryngostroboscopic evaluation revealed no significant between-group differences in closure, but the mucosal waves differed significantly (Table 2).

Discussion

Although supraglottic physiology is poorly understood, compression of the false vocal folds and medial movements

of the ventricular bands contribute to voice production (4,12). Supraglottic pressure affects vocal fold vibration by accelerating and decelerating the air column (13). This pressure is a component of the input impedance controlling glottal flow and can profoundly affect vocal fold oscillation (14). Titze (15) found that voicing was impossible at a supraglottic pressure of zero.

The sCPP reflects the quality of the voice overall and the vocal tract itself, and can be used as a diagnostic test (16). Heman-Ackah et al., (8) found that an sCPP <4 evidenced dysphonia. We found that only one SL patient, but all controls, had sCPPs >4 (Figure 1 and 2). Thus, SL caused dysphonia. Although SL patients have been subjected to acoustic analyses (5,17,18), neither the sCPP nor the CPP of such patients have been studied (to the best of our knowledge). Stone et al. (10) found that the sCPPs of patients who had undergone transoral laser microsurgery were generally low; sCPP does not depend on Fo, which is difficult to measure in severely dysphonic patients (19). The Fo, which is the principal contributor to voice perception, differed significantly between SL and control patients. Although different algorithms have been used in different studies to calculate Fo, all such studies have found that Fo changes after SL (5,17,18). The vocal fold is protected during SL, enabling production of voice signals that include periodic components, and thus we could record Fo values. However, Topaloglu et al. (5) found that the extended procedure changed both the Fo and perturbation parameters.

Table 1. Analysis of fundamental frequency and smoothed cepstral peak point results

	Fo	sCPP
SL	186.00±10.11	2.96±1.67
Control	136.12±23.65	5.09±0.55
p	0.002	0.003

SL: Supraglottic laryngectomy, Fo: Fundamental frequency, sCPP: Smoothed cesptral peak prominence

Table 2. Analysis of laryngostroboscopic records

	Closure	Mucosal wave
SL	6 complete and 4 incomplete	8.8±1.63
Control	10 complete	10±0
p	0.26	0.00023

SL: Supraglottic laryngectomy

Stroboscopy is used for both diagnosis and follow-up of laryngeal cancer (20), and to evaluate phonation after SL. We assessed glottal closure and the mucosal wave because these parameters directly affect vocal quality (21). Stroboscopy revealed no significant between-group differences in glottal closure; turbulence was absent at the glottic level. However, the mucosal wave patterns were affected in four patients (two of whom had received radiotherapy). Krausert et al. (22) also found that mucosal vibration was affected in 2 of 12 patients who had undergone SL.

This is the first study which analysed stroboscopic results and sCPPs after SL. The principal limitation of our work was the small number of patients. In addition, we did not evaluate speech, as we lacked some speech records. We could not compare patients who did and did not receive radiotherapy because patient numbers were low. Further studies on larger cohorts are required.

Conclusion

SL reduces sCPP and affects the mucosal wave, reducing voice quality. Further studies on larger cohorts are required.

Figure 1. Smoothed cepstral analysis of supraglottic laryngectomy patients

Figure 2. Smoothed cepstral analysis of healthy subject

Ethics

Ethics Committee Approval: International Review Board approval was obtained from University of Health Sciences İstanbul Okmeydani Training and Research Hospital Ethical Comitee (date: 05.08.2018, reference number: 921).

Informed Consent: A consent to publish was obtained from all the participants.

Peer-review: Externally peer-reviewed.

Authorship Contributions

Concept: Z.S., O.Ü., H.S., Design: Z.S., O.Ü., T.L.K., Data Collection or Processing: T.L.K., H.S., B.T., Analysis or Interpretation: B.T., G.E., Y.U., Literature Search: B.T., G.B., Y.U., Writing: Z.S., O.Ü., H.S.

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References

1. M.H. Hast. Applied embryology of the larynx, In: P.W. Alberti, D.P. (Eds). Centennial Conference on Laryngeal Carcinoma. Appleton-Century-Croft, New York, 1976, pp. 6-10.
2. J.J. Pressmann, M.B. Simon, C. Monell, Anatomical studies related to dissemination of cancer of the larynx, Trans Am Acad Opthalmol Otolaryngol 1960;64:628-638.
3. Prades JM, Simon PG, Timoshenko AP, Dumollard JM, Schmitt T, Martin C. Extended and standard supraglottic laryngectomies: a review of 110 patients, Eur Arch Otorhinolaryngol 2005;262:947-952.
4. Stager S. The role of the supraglottic area in voice production. Otolaryngol Cur Res 2012;2:1-7.
5. Topaloğlu I, Salturk Z, Atar Y, Berkiten G, Büyükkoç O, Çakır O. Evaluation of voice quality following supraglottic laryngectomy. Otolaryngology head and Neck Surg 2014;151:1003-1007.
6. Hillenbrand J, Cleveland RA, Erikson RL. Acoustic correlates of breathy vocal quality. J Speech Hear Res 1997;34:769-778.
7. Hillenbrand J, Houde RA. Acoustic correlates of breathy vocal quality dysphonic voices and continuous speech. J Speech Hear Res 1996;39:311-321.
8. Heman-Ackah YD, Sataloff RT, Laureyns G, Lurie D, Michael DD, et al. Heuer r quantifying the cepstral peak prominence, a measure. J Voice 2014;28:783-788.
9. Flaire R, Godino-Llorente RI. Cepstral peak prominence: a comprehensive analysis. http://oa.upm.es/35802/1/INVE_MEM_2014_190250.pdf.
10. Stone D, McCabe P, Palme CE, Heard R, Eastwood C, Riffat F et al. Voice outcomes after transoral laser microsurgery for early glottic cancer-considering signal type and smoothed cepstral peak prominence. J Voice 2015;29:370-381.
11. Makeieff M, Barbotte E, Giovanni A, Guerrier B. Acoustic and aerodynamic measurements of speech production after supracricoid partial laryngectomy. Laryngoscope 2005;115:546-551.
12. Behrman A, Dahl LD, Abramson AL, Schutte HK. Anterior-posterior and medial compression of the supraglottis: signs of nonorganic dysphonia or normal postures? J Voice 2003;17:403-410.
13. Titze IR. Acoustic interpretation of resonant voice. J Voice 2001;15:519-528.
14. Titze IR, Story BH. Acoustic interactions of the voice source with the lower vocal tract. J Acoust Soc Am 1997;101:2234-2243.
15. Titze IR. A theoretica. J Voice. 2004;18:292-298.
16. Knapp RG, Miller MC, Describing the performance of a diagnostic test, In: R.G. Knapp, M.C. Miller MC (Eds) Clinical Epidemiology and Biostatistics. Harwal Publishing Company. Malvern PA, 1992, pp. 31-52.
17. Peretti G, Piazza C, Cattaneo A, De Benedetto L, Martin E, Nicolai P. Comparision of functional outcomes after endoscopic versus open-neck supraglottic laryngectomies, Ann Otol Rhinol Laryngol 2006;115:827-832.
18. Peretti G, Piazza C, Cattaneo A, De Benedetto L, Martin E, Nicolai P. Comparision of functional outcomes after endoscopic versus open-neck supraglottic laryngectomies, Ann Otol Rhinol Laryngol 2006;115:827-832.
19. Roh JL, Kim DH, Park CI. Voice swallowing and quality of life in patients after transoral laser surgery for supraglottic carcinoma. J Surg Oncol 2008;98:184-189.
20. Heman-Ackah YD, Michael DD, Goding GS Jr. The relationship between cepstral peak prominence and selected parameters of dysphonia. J Voice 2002;16:20-27.
21. Brandstorp-Boesen J, Falk RS, Boysen M, Brøndbo K. Long-term trends in gender, T-stage, subsite and treatment for laryngeal cancer at a single center. Eur Arch Otorhinolaryngol 2014;271:3233-3239. Doi 10.1007/s00405-014-3100-9.
22. Krausert CR, Olszewski AE, Taylor LN, McMurray CS, Dailey SH, Jiang JJ. Mucosal wave measurement and visualization techniques. J Voice 2011;25:395-405.

CASE REPORT

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Anesthesia Experience in a Patient with Myotonia Congenita

Konjenital Miyotonili Bir Hastadaki Anestezi Deneyimimiz

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Abstract

Myotonia congenita (MC) was first described as a skeletal muscle disorder by Thomsen in 1876. As a result of the mutation of the chloride channel gene *(CLCN1)*, which is on the 17th chromosome, patients suffer from muscle contractility and fatigue. Malignant hyperthermia may occur in these patients in anesthesia. We presented our anesthesia experience in a patient who suffers from MC in this article.

Keywords: Myotonia congenita, malignant hyperthermia, anesthesia

Öz

Myotoni konjenita (MC), Thomsen tarafından, 1876 yılında, iskelet kaslarında ortaya çıkan bir hastalık olarak tanımlanmıştır. On yedinci kromozomda yer alan klor kanalı geninin *(CLCN1)* bir mutasyonu sonucunda, hastalarda kas kontraksiyonları ve yorgunluk ortaya çıkar. Bu hastalarda anestezi altında malin hipertermi gelişebilir. Aşağıda bir MC hastasıyla ilgili olarak yaşadığımız anestezi deneyimini paylaşmak istiyoruz.

Anahtar kelimeler: Myotoni konjenita, malin hipertermi, anestezi

Introduction

Myotonia congenita (MC) was first described as a skeletal muscle disorder by Thomsen in 1876. As a result of the mutation of the chloride channel gene *(CLCN1)*, which is on the 17th chromosome, patients suffer from muscle contractility and fatigue. Autosomal dominance and autosomal recessive heredity may present in this disease (1,2) The prevalence of MC is 1/100000 all over the world (3). In this disease, muscle contraction, hypertrophy and contracture are present without muscle weakness. Dysphagia, aspiration and cardiomyopathy are frequent symptoms. The most important complication is malignant hyperthermia in this patients.

We presented our anesthesia experience in a patient who suffer from MC in this article.

Case Report

A 54-year-old male patient (American Society Anesthesiologists 2, body mass index: 24) with right upper quadrant abdominal pain, nausea and vomiting was admitted to a general surgery clinic for cholecystectomy. The patient was diagnosed with MC at the age of 16 with complaints of fatigue. Since then he was followed up by neurology department with oral treatment of carbamazepin 200 mg per day. There was no family history about MC or malignant hyperthermia and no previous anesthetic exposure. There were no symptoms of muscle weakness or rigidity in his physical exam, but intubation difficulty signs (Mallampati 3, oral cavity opening less than 2.5 cm) were present. Thyromenthal and stermomenthal distance normal, head extantion is not restricted. Neurology department recommended that anesthesiology department must be prepared for

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malign hyperthermia during anesthesia. They pointed out that all precautions related with malign hyperthermia (especially dantrolene sodium) should be provided and anesthesiology department should be alert that postoperative recovery period of the patient could be much longer than the normal patients.

Before the operation, anesthesia machine was flushed with 15/L/min (O_2) about 20 minute. Respiratory circuit, soda lime and filter were changed. Any premedication was not applied to the patient. Electrocardiogram (ECG), noninvasive blood pressure, (SpO_2), ($EtCO_2$) and esophageal temperature were monitorized. In the induction period, 200 mg propofol and 200 mcg fentanyl were injected to the patient. He was intubated with video-laryngoscope C-mac D blade and intubation stylet without administering any muscle relaxant drug. Maintenance of anesthesia was provided with total intravenous anesthesia (TIVA) (propofol and remifentanil), and patient was ventilated with 6 L/min 50% oxygen/air mixture. During the operation, 1000 mL isotonic saline was infused.

In the operation period patient vital parameters and hemodynamic status were stable and esophageal temperature was 35.9-36.2 °C, ($ETCO_2$) values were 32-35 mmHg. During the operation blood gas analysis values were within normal limits (Ph: 7.4, PCO_2: 38, P02: 184, lactate: 0,8, K: 3,4). For the postoperative pain control, tramadol HCl 100 mg was administered.

Operation was finished after 90 minutes. But spontanous ventilation was not achieved. The patient was transferred to the intensive care unit (ICU), because of the prolonged recovery time. After 3 hours in the ICU, patient was self-extubated. The patient was discharged to the general surgery ward without any sequel and with full recovery on the 2nd day of the operation.

Discussion

MC first described by A. J. Thomsen in 1876 in his own family. Therefore, this autosomal dominate myotonia is named as Thomsen. It begins at the childhood and affects the upper extremities. Temporary muscle rigidity diminishes with rest. The prognosis of this disease is good (4).

In our patient similar symptoms (fatigue without muscle weakness, muscle rigidity which diminishes with rest and responds medical treatment) were present. The disorder had been diagnosed at 16 years old and had responded well to drug therapy with carbamazepine. The efficacy of carbamazepine treatment in the literature has been explained by membrane stabilization by reducing post-tetanic potentials as to be in our patient (5).

In another type of myotonia is named by Becker, lower extremities are mainly affected. In this form, symptoms are more severe than to be in the Thomsen type (6).

In pulmonary and neuromuscular diseases such as MCs, regional anesthesia should be preferred instead of general anesthesia. If general anesthesia is performed, short-acting drugs such as propofol and remifentanil can be used as to be in our patient (7).

It should also be kept in mind that masseter muscle spasm may develop during the induction of anesthesia in myotonic diseases (8).

When the inhalation anesthetics were used, shivering may occur, and myotonia may increase (9).We administered TIVA with remifentanil and propofol, instead of inhalation anesthetics. In our anesthetic plan, we did not prefer to use muscle relaxants. We chose intravenous anesthetic drugs, especially narcotic analgesics for intubation and maintenance of anesthesia, because shivering might not be observed with opioid analgesic agents.

This type neuromuscular diseases can cause malign hyperthermia during anesthesia because of increased muscle activity (10). We took some precautions against possibility of malign hyperthermia (11). We kept ready dantrolene sodium in the operation theatre. With the help of Medical Crisis Center in İstanbul, we achieved the drug from another Training and Research Hospital. For our safety precautions, we flushed the anesthetic machine before the operation, we changed the ventilation circuits, soda lime and filter, and we chose the anesthetic drugs that did not trigger malign hyperthermia.

Because, pain could be induced muscle rigidity, postoperative pain control is very important in these patients (12,13). Therefore, we administered tramadol intravenous intraoperative and postoperative period to our patient.

It was reported in the literature that cold environment, tremors, hyperkalemia, and mechanical or electrical stimulation may trigger myotonia in these patients, and acidosis may occur (14,15,16,17). For this reason, arterial blood gas analysis was followed and normothermia was provided by heat monitoring in our patient. Thanks to these precautions, acidic acidosis was not observed.

Prior to anesthesia of patients with CM, preoperative evaluation, laboratory tests, relevant consultations,

anesthetic drugs to be used, normothermia and ICU follow-up in postoperative period are also important. If anesthesiologyst can't obtain dantrolene natrium, TIVA could be a safe solution with the precautions that were present above.

Ethics

Informed Consent: Informed consent from patients.

Peer-review: Internally and externally peer-reviewed.

Authorship Contributions

Concept: Y.C.A., Design: S.Ş., Y.C.A., Ş.K. Data Collection or Processing: S.Ş., S.K., K.B., Analysis or Interpretation: V.E., Literature Search: S.Ş., S.K., K.B., Writing: S.Ş., Y.C.A., Ş.K.

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References

1. Russel SH, Hirsch NP. Anaesthesia and myotonia. Br J Anaesth 1994;72:210-216.
2. Jurkat-Rott K, Lehmann-Horn F. Human muscle voltagegated ion channels and hereditary disease. Curr Opin Pharmacol 2001;1:280-287.
3. Sun C, Tranebjaerg L, Torbergsen T, Holmgren G, van Ghelue M. Spectrum of CLCN1 mutations in patients with myotonia congenita in Northern Scandinavia. Eur J Hum Genet 2001;9:903-909.
4. Parness J, Bandschapp O, Girard T. The Myotonias and Susceptibility to Malignant Hyperthermia. Anesth Analg 2009;109:1054-1064.
5. Savitha MR, Krishnamurthy B, Hyderi A, Farhan-Ul-Haque, Ramachandra NB. Myotonia congenita--a successful response to carbamazepine. Ind J Pediatr 2006;73:431-433.
6. Heatwole CR, Moxley RT. The nondystrophic myotonias. Neurotherapeutics 2007;4:238-251.
7. England DE: Mutant sodium channels, myotonia and propofol, Muscle Nerve 2001;24:713-715.
8. Looi I, Bakar A , Lim CH, Khoo TH, Samuel PE. Anaesthetists' nightmare: masseter spasm after ınduction in an undiagnosed case of myotonia congenita. Med J Malaysia 2008;63:423-425.
9. Vaughan MS, Vaughan RW, Cork RC. Hypothermia in adults: relationship of age, anesthesia and shivering to rewarming. Anesth Analg 1981;60:746-751.
10. Heimann-Patterson T, Martino C, Rosenberg H, Fletcher JE, Tahmoush AJ. Malignant hyperthermia in myotonia congenita. Neurology 1988;38:810-812.
11. Marsh S, Ross N, Pittard A. Neuromuscular disorders and anaesthesia. Part 1: Generic Anaesthetic Management Continuing Education in Anaesthesia, Critical Care and Pain 2011;11:115-118.
12. Conravey A, Santana-Gould L. Myotonia congenita and myotonic dystrophy: surveillance and management. Curr Treat Options Neurol 2010;12:1628.
13. Cohen IT, Kaplan R. Repeat episodes of severe muscle rigidity in a child receiving sevoflurane. Paediatr Anaesth 2006;16:1077-1079.
14. Driesson J. Neuromuscular and mitochondrial disorders: what is relevant to the anaesthesiologist?. Curr Opin Anaesthesiol 2008;21:350-355.
15. Russel SH, Hirsch NP. Anaesthesia and myotonia. Br J Anaesth 1994;72:210-216.
16. Catena V, Del Monte DD, Rubini A, Guccione C, Ricagna F, Gangeri G, et al. Anesthesia and myotonic dystrophy (Steinert's syndrome). The role of intravenous anesthesia with propofol, cis-atracurium, and remifentanil. A case report. Minerva Anestesiol 2007;73:475-479.
17. Gutmann L, Phillips LH. Paramyotonia congenita. Seminarsm Neurology 1991;11:249-25.