# Source details

## Malaysian Journal of Medicine and Health Sciences

Scopus coverage years: from 2007 to 2022

Publisher: Faculty of Medicine and Health Sciences

ISSN: 1675-8544

Subject area: Medicine: General Medicine

Source type: Journal

View all documents > | Set document alert | Save to source list

CiteScore 2021
0.3

SJR 2021
0.139

SNIP 2021
0.187

CiteScore | CiteScore rank & trend | Scopus content coverage

**Improved CiteScore methodology**

CiteScore 2021 counts the citations received in 2018-2021 to articles, reviews, conference papers, book chapters and data papers published in 2018-2021, and divides this by the number of publications published in 2018-2021. Learn more >

### CiteScore 2021

$$0.3 = \frac{402 \text{ Citations } 2018 - 2021}{1{,}334 \text{ Documents } 2018 - 2021}$$

Calculated on 05 May, 2022

### CiteScoreTracker 2022

$$0.4 = \frac{716 \text{ Citations to date}}{1{,}872 \text{ Documents to date}}$$

Last updated on 05 February, 2023 • Updated monthly

### CiteScore rank 2021

| Category | Rank | Percentile |
|---|---|---|
| Medicine<br>└ General Medicine | #694/826 | 16th |

View CiteScore methodology > | CiteScore FAQ > | Add CiteScore to your site

## About Scopus

What is Scopus

Content coverage

Scopus blog

Scopus API

Privacy matters

## Language

日本語版を表示する

查看简体中文版本

查看繁體中文版本

Просмотр версии на русском языке

## Customer Service

Help

Tutorials

Contact us

# Malaysian Journal of Medicine and Health Sciences

**COUNTRY**

Malaysia

Universities and research institutions in Malaysia

Media Ranking in Malaysia

**SUBJECT AREA AND CATEGORY**

Medicine
Medicine (miscellaneous)

**PUBLISHER**

Faculty of Medicine and Health Sciences, University Putra Malaysia

**H-INDEX**

10

**PUBLICATION TYPE**

Journals

**ISSN**

16758544

**COVERAGE**

2007-2021

**INFORMATION**

Homepage

How to publish in this journal

mjmhs@upm.edu.my

**SCOPE**

The Malaysian Journal of Medicine and Health Sciences (MJMHS) is published by the Faculty of Medicine and Health Sciences, Universiti Putra Malaysia. The main aim of the MJMHS is to be a premier journal on all aspects of medicine and health sciences in Malaysia and internationally. The focus of the MJMHS will be on results of original scientific research and development, emerging issues and policy analyses pertaining to medical, biomedical and clinical sciences.

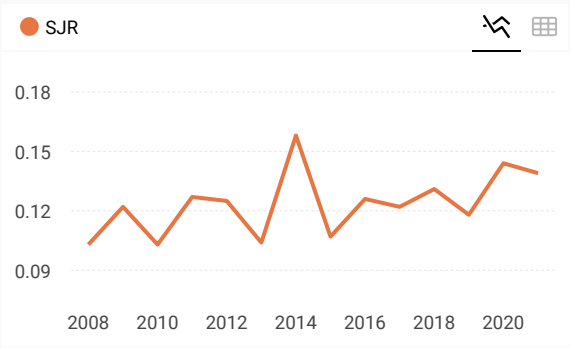
FIND SIMILAR JOURNALS

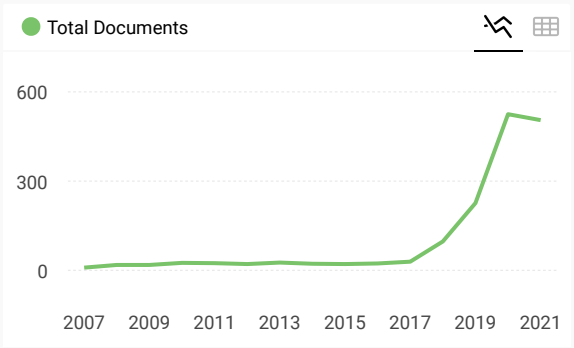
1
**Malaysian Journal of Medical Sciences**
MYS
**45%**
similarity

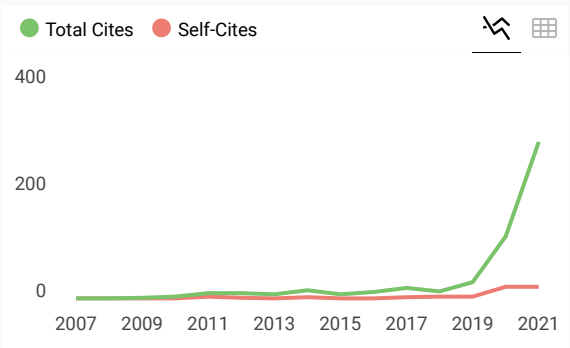
2
**BioMed Research International**
USA
**41%**
similarity

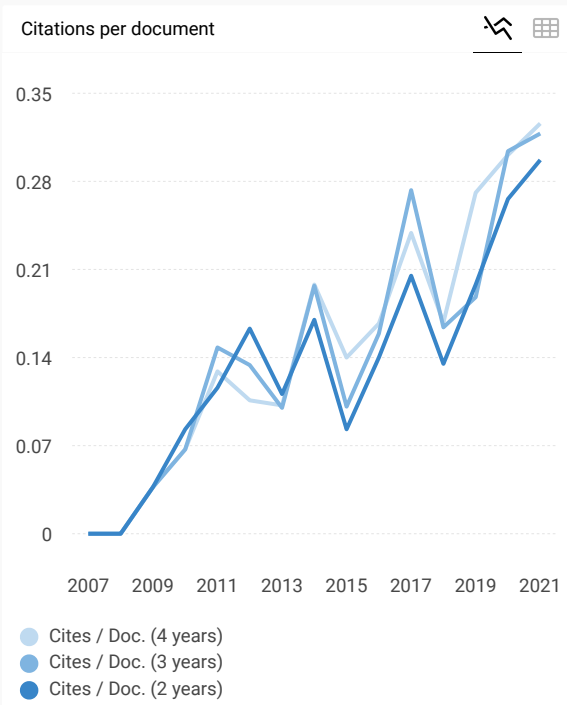
3
**Iranian Journal of Public Health**
IRN
**40%**
similarity

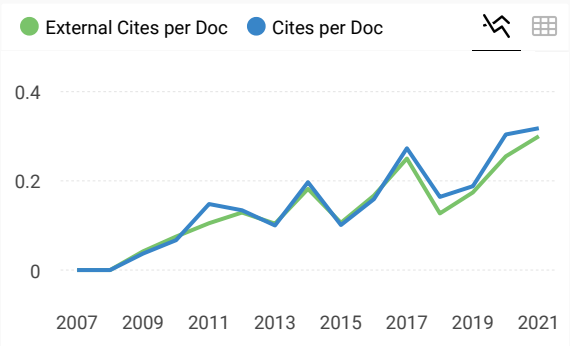
4
**Medicina (Lithuania)**
CHE
**39%**
similarity



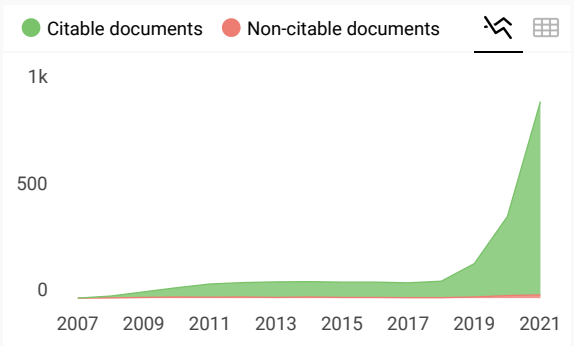



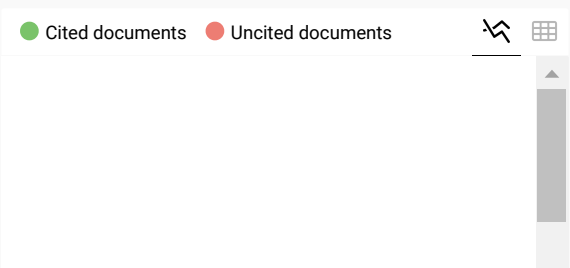








Show this widget in your own website

Just copy the code below and paste within your html code:

```
<a href="https://www.scimag
```





Metrics based on Scopus® data as of April 2022

D

**Dr. Atheer Kadhim Ibadi** 2 years ago

Dear Melanie Ortiz
Please, I want to ask if the Malaysian Journal of Medicine and Health Sciences still under Scopus coverage or is out of coverage because I don't find it in the Scoups preview best regards.

reply

SCImago Team

**Melanie Ortiz** 2 years ago

Dear Dr. Atheer,
Thank you very much for your comment.
All the metadata have been provided by Scopus /Elsevier in their last update sent to SCImago, including the Coverage's period data. The SJR for 2020 has been released on 17 May 2021. We suggest you consult the Scopus database directly to see the current index status as SJR is a static image of Scopus, which is changing every day.
For further information, please contact Scopus support:
https://service.elsevier.com/app/answers/detail/a_id/14883/kw/scimago/supporthub/scopus/
Best Regards, SCImago Team

M

**Maral Fathulla Thabit** 2 years ago

Good day
i am assistant professor ,family doctor ,wishing to publish medical articles through your kind journal,please inform me about instructions of authors and what are the charges required.

reply

SCImago Team

**Melanie Ortiz** 2 years ago

Dear Maral, thank you very much for your comment, we suggest you look for author's instructions/submission guidelines in the journal's website. Best Regards, SCImago Team

MALAYSIAN JOURNAL OF
Medicine and Health Sciences
Vol. 18 No. 5, Sept 2022

Faculty of Medicine and Health Sciences
Universiti Putra Malaysia
43400 UPM Serdang
Selangor Darul Ehsan
Malaysia
http://medic.upm.edu.my/

UPM Press
Universiti Putra Malaysia
43400 UPM Serdang
Selangor Darul Ehsan
Malaysia
http://penerbit.upm.edu.my


Malaysian Journal of Medicine and Health Sciences Vol. 18 No. 5, Sept 2022

# MALAYSIAN JOURNAL OF

# Medicine and Health Sciences

Vol. 18 No. 5 Sept 2022

A scientific journal published by Universiti Putra Malaysia Press

A scientific journal published by Universiti Putra Malaysia Press

Abstracted / indexed in the Scopus database

## About the Journal

The Malaysian Journal of Medicine and Health Sciences (MJMHS) is published by the Faculty of Medicine and Health Sciences, Universiti Putra Malaysia. The main aim of the MJMHS is to be a premier journal on all aspects of medicine and health sciences in Malaysia and internationally. The focus of the MJMHS will be on results of original scientific research and development, emerging issues and policy analyses pertaining to medical, biomedical and clinical sciences. The Malaysian Journal of Medicine and Health Sciences is now indexed in the following data bases: Scopus, EBSCOhost, ISC, and Rubriq.

## Editorial Board



## International Advisory Board

# MJMHS VOL.18 NO. 5 - SEPTEMBER 2022

Editorial board (/upload/dokumen/20220914085955Cover_Sept_2022.pdf)
(/upload/dokumen/20220914085955Cover_Sept_2022.pdf)

Content (/upload/dokumen/20220915091818Content_Sept_2022.pdf)

Acknowledgements (/upload/dokumen/20220914090431ACKNOWLEDGEMENT_SEPT_2022.pdf)

Authors Guideline (/upload/dokumen/20220914090156Author_Guidelines-Version_XIII.pdf)

Editorial (/upload/dokumen/20220914090509Editorial_Sept_2022.pdf)


## ORIGINAL ARTICLE

1) Assessment of Knowledge, Attitude and Practice on Occupational Safety and Health Among Laboratory Workers in OSHMS Certified and Non-Certified Public Universities in Malaysia (/upload/dokumen/20220914090613 01_MJMHS_1177.pdf)

https://doi.org/10.47836/mjmhs.18.5.2 (https://doi.org/10.47836/mjmhs.18.5.2)

2) Validation of Malay Language Translated Questionnaire on Adult Intensive Care Unit Nurses' Perception and Involvement in End-of-life Care (/upload/dokumen/20220914090716 02_MJMHS_1331.pdf)
https://doi.org/10.47836/mjmhs.18.5.3 (https://doi.org/10.47836/mjmhs.18.5.3)

3) Upregulation of ppET-1/ETBR/eNOS mRNA Expression After Calcitriol Treatment in Chronic Kidney Diseases Model in Rats (/upload/dokumen/20220914090749 03_MJMHS_0597.pdf)

https://doi.org/10.47836/mjmhs.18.5.4 (https://doi.org/10.47836/mjmhs.18.5.4)

4) Vertigo Patients Characteristic in Neurotology Outpatient Clinic, Dr. Soetomo General Academic Hospital, Surabaya, Indonesia (/upload/dokumen/20220914090833 04_MJMHS_1159.pdf)

https://doi.org/10.47836/mjmhs.18.5.5 (https://doi.org/10.47836/mjmhs.18.5.5)

5) Effect of Auditory Stimulation by Upbeat Music on Radial Pulse

(/upload/dokumen/20220914090914 05_MJMHS_0443.pdf)https://doi.org/10.47836/mjmhs.18.5.6 (https://doi.org/10.47836/mjmhs.18.5.6)

6) Validity of Medical Students Self-Assessment of Proficiency in Clinical Long Case Examination (/upload/dokumen/20220914090949 06_MJMHS_0225.pdf)

https://doi.org/10.47836/mjmhs.18.5.7 (https://doi.org/10.47836/mjmhs.18.5.7)

7) Relationships between Antiretroviral Therapy Adherence with Personality Traits and Presence of Psychological Distress among Adults with Human Immunodeficiency Virus in Northwest Peninsular Malaysia: A Cross-Sectional Study (/upload/dokumen/20220914091023 07_MJMHS_0787.pdf)
https://doi.org/10.47836/mjmhs.18.5.8 (https://doi.org/10.47836/mjmhs.18.5.8)

8) Evaluation of Anti-Hyperlipidaemic Activity of a Mixture of Zinger officinale, Allium sativum, Citrus Lemon, Honey, and Malus domestica Vinegar (ZACAH) Extracts in Rats Fed with High Cholesterol Diet (/upload/dokumen/20220914091120 08_MJMHS_1014.pdf)
https://doi.org/10.47836/mjmhs.18.5.9 (https://doi.org/10.47836/mjmhs.18.5.9)

9) Gender-Stratified Factors Associated with Stigma Toward HIV/AIDS among Rural Communities in Sarawak, Malaysia (/upload/dokumen/20220914091151 09_MJMHS_0853.pdf)

https://doi.org/10.47836/mjmhs.18.5.10 (https://doi.org/10.47836/mjmhs.18.5.10)

10) Perception and Attitude of Malaysian Community Pharmacists Towards the Implementation of Telepharmacy (/upload/dokumen/20220914091223 10_MJMHS_1045.pdf)

https://doi.org/10.47836/mjmhs.18.5.11 (https://doi.org/10.47836/mjmhs.18.5.11)

11) Knowledge and Acceptance of COVID-19 (SARS CoV2) Vaccination among Foundation students in a College in Kedah, Malaysia (/upload/dokumen/20220914091256 11_MJMHS_0547.pdf)

https://doi.org/10.47836/mjmhs.18.5.12 (https://doi.org/10.47836/mjmhs.18.5.12)

12) Metabolic Syndrome as a Risk for Coronary Heart Disease in Indonesia: A Longitudinal Study 2007-2014 (/upload/dokumen/20220914091331 12_MJMHS_1172.pdf)

https://doi.org/10.47836/mjmhs.18.5.13 (https://doi.org/10.47836/mjmhs.18.5.13)

13) Development, Validation and Acceptability of a Newly Developed Nutrition Resource Kit for At-Risk and Malnourished Elderly in Health Clinics Setting (/upload/dokumen/20220914091446 13_MJMHS_1519.pdf)

https://doi.org/10.47836/mjmhs.18.5.14 (https://doi.org/10.47836/mjmhs.18.5.14)

LIHAT JUGA

MJMHS VOL.18 SUPP 22 -DECEMBER 2022 (/jurnal_kami/volume_18_2022/mjmhs_vol18_supp_22_december_2022-70525)

MJMHS VOL.18 SUPP 21 -DECEMBER 2022 (/jurnal_kami/volume_18_2022/mjmhs_vol18_supp_21_december_2022-70522)

MJMHS VOL.18 SUPP 20 -DECEMBER 2022 (/jurnal_kami/volume_18_2022/mjmhs_vol18_supp_20_december_2022-70524)

MJMHS VOL.18 SUPP 19 -DECEMBER 2022 (/jurnal_kami/volume_18_2022/mjmhs_vol18_supp_19_december_2022-70742)

MJMHS VOL.18 SUPP 18 - DECEMBER 2022 (/jurnal_kami/volume_18_2022/mjmhs_vol18_supp_18_december_2022-70472)

MJMHS VOL.18 SUPP 17 -DECEMBER 2022 (/jurnal_kami/volume_18_2022/mjmhs_vol18_supp_17_december_2022-70668)

MJMHS VOL.18 SUPP 16 -NOVEMBER 2022 (/jurnal_kami/volume_18_2022/mjmhs_vol18_supp_16_november_2022-70311)

MJMHS VOL.18 NO.6 -NOVEMBER 2022 (/jurnal_kami/volume_18_2022/mjmhs_vol18_no6_november_2022-70224)

MJMHS VOL.18 SUPP 15 -OKTOBER 2022 (/jurnal_kami/volume_18_2022/mjmhs_vol18_supp_15_oktober_2022-69950)

MJMHS VOL.18 SUPP 14 -OKTOBER 2022 (/jurnal_kami/volume_18_2022/mjmhs_vol18_supp_14_oktober_2022-69926)

MJMHS VOL.18 SUPP 13 -OKTOBER 2022 (/jurnal_kami/volume_18_2022/mjmhs_vol18_supp_13_oktober_2022-69861)

MJMHS VOL.18 SUPP 12 -OKTOBER 2022 (/jurnal_kami/volume_18_2022/mjmhs_vol18_supp_12_oktober_2022-69849)

MJMHS VOL.18 SUPP 11 -SEPTEMBER 2022 (/jurnal_kami/volume_18_2022/mjmhs_vol18_supp_11_september_2022-69231)

MJMHS VOL.18 SUPP 10 - SEPTEMBER 2022 (/jurnal_kami/volume_18_2022/mjmhs_vol18_supp_10_september_2022-69230)

MJMHS VOL.18 NO. 5 - SEPTEMBER 2022 (/jurnal_kami/volume_18_2022/mjmhs_vol18_no_5_september_2022-68867)

MJMHS VOL.18 SUPP 9 - JULY 2022 (/jurnal_kami/volume_18_2022/mjmhs_vol18_supp_9_july_2022-67770)

MJMHS VOL.18 NO. 4 - JULY 2022 (/jurnal_kami/volume_18_2022/mjmhs_vol18_no_4_july_2022-67723)

MJMHS VOL.18 SUPP 8 - JUNE 2022 (/jurnal_kami/volume_18_2022/mjmhs_vol18_supp_8_june_2022-67528)

MJMHS VOL.18 SUPP 7 -MAY 2022 (/jurnal_kami/volume_18_2022/mjmhs_vol18_supp_7_may_2022-66854)

MJMHS VOL.18 NO.3 -MAY 2022 (/jurnal_kami/volume_18_2022/mjmhs_vol18_no3_may_2022-66847)

MJMHS VOL.18 SUPP 6 - APRIL 2022 (/jurnal_kami/volume_18_2022/mjmhs_vol18_supp_6_april_2022-66615)

MJMHS VOL.18 SUPP 1 - JANUARY 2022 (/jurnal_kami/volume_18_2022/mjmhs_vol18_supp_1_january_2022-64824)

MJMHS VOL.18 SUPP 5 - APRIL 2022 (/jurnal_kami/volume_18_2022/mjmhs_vol18_supp_5_april_2022-66369)

MJMHS VOL.18 SUPP 4 -MARCH 2022 (/jurnal_kami/volume_18_2022

14) Elbow-Height Handle and Staggered Stance Exhibited Greatest Force in Pushing and Pulling: A Study among Malaysian Adults (/upload/dokumen/2022091409152114_MJMHS_1272.pdf)

https://doi.org/10.47836/mjmhs.18.5.15 (https://doi.org/10.47836/mjmhs.18.5.15)

15) The Psychological Impact of Covid-19 Pandemic on the General Population of Oman: A National Community-based Study (/upload/dokumen/2022091409160015_MJMHS_1036.pdf)

https://doi.org/10.47836/mjmhs.18.5.16 (https://doi.org/10.47836/mjmhs.18.5.16)

16) Medication Appropriateness among Older Persons Admitted to a General Hospital in Malaysia (/upload/dokumen/2022091409163216_MJMHS_1013.pdf)

https://doi.org/10.47836/mjmhs.18.5.17 (https://doi.org/10.47836/mjmhs.18.5.17)

17) Application of HRM Analysis in Detection of PDGFRA Exon 10 Polymorphism in CML Patients with Imatinib Resistance (/upload/dokumen/2022091409170917_MJMHS_1126.pdf)

https://doi.org/10.47836/mjmhs.18.5.18 (https://doi.org/10.47836/mjmhs.18.5.18)

18) Density Of Eggs and Larvae of Aedes Spp. and the Characteristics of their Larvae Habitat in Endemic Dengue Area In Ternate City (/upload/dokumen/2022091409202818_MJMHS_1215.pdf)

https://doi.org/10.47836/mjmhs.18.5.19 (https://doi.org/10.47836/mjmhs.18.5.19)

19) Changes of Ocular Biometry and Intraocular Pressure in Patients Treated With Intravitreal Injection of Antivascular Endothelial Growth Factors

(/upload/dokumen/2022091409210119_MJMHS_0246.pdf)https://doi.org/10.47836/mjmhs.18.5.20 (https://doi.org/10.47836/mjmhs.18.5.20)

20) Assessment of Body Fat Percentage and Its Associated Factors among Hospitalized Elderly (/upload/dokumen/2022091409220420_MJMHS_1629.pdf)

https://doi.org/10.47836/mjmhs.18.5.21 (https://doi.org/10.47836/mjmhs.18.5.21)

21) Decaf Score in Predicting Prognosis of Acute Exacerbation of Copd in Patient Required Hospital and ICU Admission

(/upload/dokumen/2022091409224921_MJMHS_1052.pdf)https://doi.org/10.47836/mjmhs.18.5.22 (https://doi.org/10.47836/mjmhs.18.5.22)

22) Rapid Molecular Point of Care Testing for Detection of Influenza A, B Viruses and Respiratory Syncytial Virus Versus Multiplex PCR (/upload/dokumen/2022091409233122_MJMHS_0093.pdf)
https://doi.org/10.47836/mjmhs.18.5.23 (https://doi.org/10.47836/mjmhs.18.5.23)

### SYSTEMATIC REVIEW

23) Workplace-based Interventions to Increase Mammography Screening in Islamic Countries: A Systematic Review and Narrative Summary
(/upload/dokumen/2022091409243223_MJMHS_1337.pdf)
https://doi.org/10.47836/mjmhs.18.5.24 (https://doi.org/10.47836/mjmhs.18.5.24)

### REVIEW ARTICLES

24) Tips for Managing Resistance to Innovation in Medical Education

(/upload/dokumen/2022091409251324_MJMHS_1185.pdf)https://doi.org/10.47836/mjmhs.18.5.25 (https://doi.org/10.47836/mjmhs.18.5.25)

25) Clinical and Haematological Parameters of Commonly Reported Non-deletional α-thalassaemia Mutations in Southeast Asia: A Review
(/upload/dokumen/2022091409255925_MJMHS_0209.pdf)
https://doi.org/10.47836/mjmhs.18.5.26 (https://doi.org/10.47836/mjmhs.18.5.26)

26) A Review on Pharmacological Properties of Christia vespertilionis
(/upload/dokumen/2022091409262926_MJMHS_0821.pdf)
https://doi.org/10.47836/mjmhs.18.5.27 (https://doi.org/10.47836/mjmhs.18.5.27)

27) Challenge of New Norms: Obesity amid COVID-19 Pandemic
(/upload/dokumen/2022091409265727_MJMHS_1473.pdf)
https://doi.org/10.47836/mjmhs.18.5.28 (https://doi.org/10.47836/mjmhs.18.5.28)

### CASE REPORT

28) Acute Post-Traumatic Locked Knee - An Unmasking of a Rare Knee Disorder (/upload/dokumen/2022091409282328_MJMHS_0837.pdf)

https://doi.org/10.47836/mjmhs.18.5.29 (https://doi.org/10.47836/mjmhs.18.5.29)

29) Isolated Gastrointestinal Symptoms as Initial Presentation in Systemic Lupus Erythematosus and Its Differential Diagnosis (/upload/dokumen/2022091409285229_MJMHS_1086.pdf)

https://doi.org/10.47836/mjmhs.18.5.30 (https://doi.org/10.47836/mjmhs.18.5.30)

30) Acute Mycoplasma Pneumoniae Encephalitis in an Adult
(/upload/dokumen/2022091409292730_MJMHS_0710.pdf)
https://doi.org/10.47836/mjmhs.18.5.31 (https://doi.org/10.47836/mjmhs.18.5.31)

31) Cryptococcal Meningitis Disguised As A Stroke: A Case Report
(/upload/dokumen/2022091409302231_MJMHS_1342.pdf)
https://doi.org/10.47836/mjmhs.18.5.32 (https://doi.org/10.47836/mjmhs.18.5.32)

### RETRACTION NOTICE

Retract:Mal J Med Health Sci 17(SUPP3):175-182, Jun 2021 (/upload/dokumen/20220915091730Retraction_Notice.pdf)

Kemaskini:: 12/01/2023 [farzana.jamaludin]

### PERKONGSIAN MEDIA



/mjmhs_vol18_supp_4_march_2022-65887)

MJMHS VOL.18 SUPP 3 - FEBRUARY 2022
(/jurnal_kami/volume_18_2022
/mjmhs_vol18_supp_3_february_2022-65634)

MJMHS VOL.18 SUPP 2 -JANUARY 2022
(/jurnal_kami/volume_18_2022
/mjmhs_vol18_supp_2_january_2022-65115)

MJMHS VOL.18 NO 2 -MARCH 2022
(/jurnal_kami/volume_18_2022
/mjmhs_vol18_no_2_march_2022-65864)

MJMHS VOL.18 NO.1 - JANUARY 2022
(/jurnal_kami/volume_18_2022
/mjmhs_vol18_no1_january_2022-65020)

pertanyaan selanjutnya

**FAKULTI PERUBATAN DAN SAINS KESIHATAN**

Universiti Putra Malaysia
43400 UPM Serdang
Selangor Darul Ehsan

03 9769 2300
03 9769 2300
03 9769 2585
dean.medic@upm.edu.my
(mailto:dean.medic@upm.edu.my)

## HUBUNGI KAMI

**FAKULTI PERUBATAN DAN SAINS KESIHATAN**
Pejabat Am Dekan
Aras 3, Bangunan Pentadbiran,
Fakulti Perubatan dan Sains Kesihatan,
43400 UPM Serdang,
Selangor Darul Ehsan.

03 9769 2300

03 9769 2585

dean.medic@upm.edu.my

**TALIAN KECEMASAN**

BAHAGIAN KESELAMATAN UPM (24 JAM)
03-9769 7990 | 03-9769 7470 | 03-9769 1999

## APLIKASI DALAM TALIAN

Sistem Maklumat Pelajar (http://smp.upm.edu.my/smp/action/security/loginSmpSetup?TX=3196766259775847)

e-ISO (http://www.reg.upm.edu.my/eISO/)

KM Portal (http://km.upm.edu.my/kmportalweb/portal/render.action?method=home)

aduan@FPSK (http://medic1.upm.edu.my/aduan)

Sistem Perkhidmatan ICT (http://spict.upm.edu.my)

Sisman (http://sisman.upm.edu.my)

Garis Panduan Syarahan Inaugural Peringkat Fakulti (http://spel.upm.edu.my/dokumen/FKUSK1_GP_Syarahan_Inaugural_Peringkat_Fakulti_150304_(1).pdf)

## CAPAIAN UPM

Sistem Pengurusan Kualiti (http://www.reg.upm.edu.my/eISO/)

Bahagian Akademik (http://www.akademik.upm.edu.my)

Sistem Permohonan Ke Luar Negara (http://bursar1.upm.edu.my/spln/)

i-GIMS (Pelajar) (http://sgsportal.upm.edu.my:8080/sgsportal/)

i-GIMS (Staf) (http://www.sps.upm.edu.my:8080/igims/index.jsp)

## PAUTAN LUAR

MyGRANTS (http://mygrants.gov.my)

(http://putra.upm.edu.my)

(http://portal.upm.edu.my)

(https://smp.upm.edu.my/)

(http://www.pertanika.upm.edu.my/)

(http://reg.upm.edu.my/eISO/)

(http://eclaims.upm.edu.my/login/)

(http://www.sps.upm.edu.my:8080/igims/index.jsp)

(http://ero.upm.edu.my/login.php)

(https://smp.upm.edu.my/smp/action/security/loginSmpSetup?TX=2178116053198847)

(http://www.spkl.upm.edu.my/)

(http://emel.upm.edu.my/)

(http://www.akademik.upm.edu.my/ebookakd#ebookakd)

BM

Entiti Kami

Dokumen

Newsletter

Tetapan



LANGGAN MELALUI EMAIL Emel anda HANTAR

WWCPIAZ~

ORIGINAL ARTICLE

# Vertigo Patients Characteristic in Neurotology Outpatient Clinic, Dr. Soetomo General Academic Hospital, Surabaya, Indonesia

Ronald Pascal Kelejan, Nyilo Purnami

Department of Otorhinolaryngology, Head and Neck Surgery, Faculty of Medicine, Universitas Airlangga, Dr. Soetomo Academic Medical Center, Surabaya, Indonesia 60286

**ABSTRACT**

**Introduction:** Vertigo is estimated to occur in 3% of adults every year. In contrast to dizziness, vertigo is associated with symptoms of peripheral or central balance disorders, while dizziness is associated with cardiovascular, neuropathic, neuromuscular, or psychosomatic diseases. **Methods:** Data for 123 patients at Hospital were taken retrospectively. The variables studied were demographic data, vestibular examination, audiometry, and vertigo diagnosis. **Results:** There were 123 vertigo patients consisting of 42 men and 81 women. The average age of the patients was 48.46 years. Most patients were diagnosed with other peripheral vertigo 37.40%, then unspecified disorder of vestibular function 15.45%, BPPV 14.63%, Meniere's disease 8.94%, dizziness 8.94%, central vertigo 8.13%, and vestibular neuritis 6.50%. The types of hearing loss were Conductive Hearing loss (CHL) 6.10%, Sensorineural Hearing Loss (SNHL) 21.54%, and Mixed Hearing Loss (MHL) 11.38%. Location of hearing loss was unilateral 23.58% and bilateral 26.83%. Mean Pure Tone Average (PTA) of vertigo with hearing loss was 52.54 dB in right ear and 55.96 dB in left ear. **Conclusion:** Most patients were diagnosed with other peripheral vertigo is female. They had normal hearing. The most common type of hearing loss was SNHL with a mean PTA of 52.54 dB in right ear and 55.96 dB in left ear. Mean PTA in vertigo patients with normal hearing was 18.29 ± 4.24 dB in right ear and 17.55 ± 4.13 dB in left ear, while mean PTA in vertigo with hearing loss was 52.54 ± 29.93 dB in right ear and 55.96 ± 28.01 in left ear.
*Malaysian Journal of Medicine and Health Sciences* (2022) 18(5):30-34. doi:10.47836/mjmhs18.5.5

**Keywords:** Vertigo, Dizziness, Vestibular disorders, Pure Tone Audiometry

**Corresponding Author:**
Nyilo Purnami, PhD
Email: nyilo@fk.unair.ac.id
Tel: +628155100081

## INTRODUCTION

The term vertigo is generally confused with complaints of dizziness. Vertigo is defined as a sensation of motion when the head moves normally without any actual movement occurring in a person, or a sensation of distorted movement when the head moves normally (1). Vertigo is associated with symptoms of peripheral (Benign Paroxysmal Positioning Vertigo [BPPV], vestibular neuritis, Meniere's disease) or central (vestibular migraine, brainstem lesions, cerebellum, cerebrum or related pathways) balance disorders (2-3). Dizziness is defined as a sensation of disturbance in the orientation of place or space without any aberrant movement sensations (1). Dizziness may present as the complaints of lightheadedness, pre-syncope (feeling faint), and disequili-brium (disorder of balance). The spectrum of dizziness is associated with cardiovascular, neuropathic, neuro-muscular, or psychosomatic disease (4).

Approximately 25% of patients with dizziness have symptoms of vertigo (3). The incidence of vertigo is estimated to be 3% in adults each year. The ratio between men and women is 1 : 2.7. Based on age, vertigo occurs three times more often in the elderly than in young adults (3,5).

Vertigo has an impact on health care morbidity and economic burden.3 Vertigo patients are searching for medical consultation (70%), asking for a sick leave (41%), having problems with daily activities (40%), and not leaving the house (19%) (5). Morbidity impacts, such as time lost due to absence from work, increased risk of falling (up to 6.5 times), and risk of recurrence (46%), will arise if the problem is not addressed (6).
The purpose of this study was to describe the profile of vertigo patients at the Neurotology Clinic, Dr. Soetomo General Academic Hospital, Surabaya, for 2 years (2017 to 2019) based on age, gender, hearing loss and vertigo diagnosis.

## MATERIALS AND METHODS

This study was a retrospective descriptive study. Sample consisted of all patients with a diagnosis of vertigo taken

from medical records at Neurotology Outpatient Clinic, Dr. Soetomo, General Academic Hospital, Surabaya, Indonesia, from January 2017 to December 2019. The variables studied were demographic data, vestibular examination, audiometry, and vertigo diagnosis. Inclusion criteria were patients with a diagnosis of vertigo based on the International Classification of Diseases 10th Revision (ICD-10), ie. Meniere's disease (H81.0), BPPV (H81.1), vestibular neuritis (H81.2), other peripheral vertigo (H81.3), vertigo of central origin (H81.4), disorder of vestibular function, unspecified (H81.9) as well as dizziness and giddiness (R42). Exclusion criteria were those with incomplete data, both regarding identity and vestibular test examination.

This study had obtained ethical feasibility from ethics commission of Dr. Soetomo General Academic Hospital, Surabaya, Indonesia. Data were collected and processed using IBM SPSS Statistics 23 program and processed descriptively.

This study was approved by Research Ethics Committee, Dr Soetomo Hospital No 1910/KEPK/III/2020.

## RESULTS

New patients who searched for treatment at Neurotology Outpatient Clinic, Dr. Soetomo General Academic Hospital were as many as 781 patients A total of 123 patients (15.75%) met the inclusion criteria for vertigo in this study.

### Gender distribution

Of the total 123 vertigo patients, a number of 101 patients (72.93%) had peripheral vertigo, 10 (8.13%) central vertigo, and 11 (8.94%) dizziness. Peripheral vertigo disorder was found in 18 patients (14.63%) with BPPV, 8 people (6.50%) with vestibular neuronitis, 46 people (37.40%) with other peripheral vertigo, and 19 people (15.45%) with disorder of vestibular function, unspecified (Table I). The gender of vertigo patients in this study were 42 (34.15%) males and 81 (65.85%) females (Table I). The ratio of males to female patients in this study was 1 : 1.93.

**Table I: Gender distribution**

| ICD 10 | Diagnosis | N(%) | Males | Females |
|---|---|---|---|---|
| H81.0 | Meniere's disease | 11(8.94%) | 5(45.45%) | 6(54.55%) |
| H81.1 | BPPV | 18(14.63%) | 6(33.33%) | 12(66.67%) |
| H81.2 | Vestibular neuritis | 8(6.50%) | 2(25.00%) | 6(75.00%) |
| H81.3 | Other peripheral vertigo | 46(37.40%) | 14(30.43%) | 32(69.67%) |
| H81.4 | Vertigo of central origin | 10(8.13%) | 3(30.00%) | 7(70.00%) |
| H81.9 | Disorder of vestibular function, unspecified | 19(15.45%) | 7(36.84%) | 12(63.16%) |
| R42 | Dizziness & giddiness | 11(8.94%) | 5(45.45%) | 6(54.55%) |
| TOTAL | | 123(100%) | 42(34.15%) | 81 (65.85%) |

### Age distribution

The youngest age of the sample in this study was 17 years old and the oldest 80 years old. The mean age of vertigo patients in this study was 48.46 ± 14.592 years. Age distribution of vertigo patients was divided into several age groups (Table II).

**Table II: Age distribution**

| Age (years) | ≤20 | 20-30 | 31-40 | 41-50 | 51-60 | 61-70 | >70 | Mean (years) | SD (years) |
|---|---|---|---|---|---|---|---|---|---|
| **H81.0** | 0(0.00%) | 1(9.09%) | 2(18.18%) | 6(54.55%) | 0(0.00%) | 2(18.18%) | 0(0.00%) | 46.27 | 13.016 |
| **H81.1** | 0(0.00%) | 1(5.56%) | 1(5.56%) | 4(22.22%) | 6(33.33%) | 4(22.22%) | 2(11.11%) | 55.56 | 13.578 |
| **H81.2** | 0(0.00%) | 0(0.00%) | 2(25.00%) | 0(0.00%) | 2(25.00%) | 2(25.00%) | 2(25.00%) | 57.25 | 14.130 |
| **H81.3** | 2(4.35%) | 5(10.87%) | 12(26.09%) | 10(21.74%) | 9(19.57%) | 6(13.04%) | 2(4.35%) | 44.87 | 15.083 |
| **H81.4** | 0(0.00%) | 1(10.00%) | 110.00%) | 3(30.00%) | 4(40.00%) | 1(10.00%) | 0(0.00%) | 48.10 | 12.124 |
| **H81.9** | 1(5.26%) | 1(5.26%) | 4(21.05%) | 4(21.05%) | 6(31.58%) | 3(15.79%) | 0(0.00%) | 46.32 | 14.154 |
| **R42** | 0(0.00%) | 2(18.18%) | 0(0.00%) | 3(27.27%) | 3(27.27%) | 3(27.27%) | 0(0.00%) | 51.73 | 14.927 |
| **N (%)** | 3(2.44%) | 11(8.94%) | 22(17.89%) | 30(24.39%) | 30(24.39%) | 21(17.07%) | 6(4.88%) | 48.46 | 14.592 |

### Distribution of the types of hearing loss

The results of audiometry were as follows: normal hearing in 60 right ears (48.78%) and 58 left ears (41.15%), Conductive hearing loss (CHL) in 11 right ears (8.94%) and 4 left ears (3.25%), Sensorineural hearing loss (SNHL) in 25 right ears (20.33%) and 28 left ears (22.76%), MHL in 11 right ears (8.94%) and 17 left ears (13.82%). No audiometric data were found in 16 pairs of ears (13.01%) (Table III).

### Distribution of hearing loss location

Vertigo patients in this study who had unilateral hearing loss were 29 (23.58%) and the bilateral one was 33 patients (26.83%) (Table IV)

### Hearing threshold

Audiometric examination in vertigo patients can also determine the Pure Tone Average (PTA) or the average hearing threshold for each right and left ear. Mean PTA value of vertigo patients with normal hearing was 18.29 ± 4.24 dB in right ear and 17.55 ± 4.13 dB in left ear, while the mean PTA in vertigo with hearing loss was 52.54 ± 29.93 dB in right ear and 55.96 ± 28.01 in left ear (Table V).

## DISCUSSION

In this study, there were 123 vertigo patients (15.57%) out of a total of 781 patients seeking treatment at the Neurotology Outpatient Clinic, Dr. Soetomo General

**Table III: Distribution of the types of hearing loss in right and left ears**

| * | | Normal | CHL | SNHL | MHL | No data |
|---|---|---|---|---|---|---|
| h81.0 | AD | 5(45.45%) | 1(9.09%) | 3(27.27%) | 2(18.18%) | 0(0.00%) |
| | AS | 3(27.27%) | 0(0.00%) | 6(54.55%) | 2(18.18%) | 0(0.00%) |
| h81.1 | AD | 8(44.44%) | 1(5.56%) | 5(27.78%) | 1(5.56%) | 3(16.67%) |
| | AS | 6(33.33%) | 1(5.56%) | 5(27.78%) | 3(16.67%) | 3(16.67%) |
| h81.2 | AD | 3(37.50%) | 0(0.00%) | 1(12.50%) | 1(12.50%) | 3(37.50%) |
| | AS | 2(25.00%) | 0(0.00%) | 1(12.50%) | 2(25.00%) | 3(37.50%) |
| h81.3 | AD | 25(54.35%) | 6(13.04%) | 7(15.22%) | 2(4.35%) | 6(13.04%) |
| | AS | 27(58.70%) | 1(2.17%) | 9(19.57%) | 3(6.52%) | 6(13.04%) |
| h81.4 | AD | 3(30.00%) | 1(10.00%) | 3(30.00%) | 2(20.00%) | 1(10.00%) |
| | AS | 4(40.00%) | 1(10.00%) | 3(30.00%) | 1(10.00%) | 1(10.00%) |
| h81.9 | AD | 10(52.63%) | 2(10.53%) | 5(26.32%) | 1(5.26%) | 1(5.26%) |
| | AS | 10(52.63%) | 1(5.26%) | 3(15.79%) | 4(21.05%) | 1(5.26%) |
| r42 | AD | 6(54.55%) | 0(0.00%) | 1(9.09%) | 2(18.18%) | 2(18.18%) |
| | AS | 6(54.55%) | 0(0.00%) | 1(9.09%) | 2(18.18%) | 2(18.18%) |
| Total | AD | 60(48.78%) | 11(8.94%) | 25(20.33%) | 11(8.94%) | 16(13.01%) |
| | AS | 58(47.15%) | 4(3.25%) | 28(22.76%) | 17(13.82%) | 16(13.01%) |

**Table IV. Distribution of hearing loss locations**

| ICD-10 | Normal | | Unilateral | | Bilateral | |
|---|---|---|---|---|---|---|
| | N | (%) | N | (%) | N | (%) |
| h81.0 | 2 | 18,18 | 4 | 36.36 | 5 | 45.45 |
| h81.1 | 6 | 33,33 | 2 | 11.11 | 7 | 38.89 |
| h81.2 | 1 | 12,50 | 3 | 37.50 | 1 | 12.50 |
| h81.3 | 22 | 47,83 | 8 | 17.39 | 10 | 21.74 |
| h81.4 | 1 | 10,00 | 5 | 50.00 | 3 | 30.00 |
| h81.9 | 8 | 42,11 | 5 | 26.32 | 5 | 26.32 |
| r42 | 5 | 45,45 | 2 | 18.18 | 2 | 18.18 |
| Total | 45 | 36,59 | 29 | 23.58 | 33 | 26.83 |

Academic Hospital, Surabaya, Indonesia. Previous studies also reported that the prevalence of vertigo in patients treated at an ENT outpatient clinic was 18% (7). Another investigator in 2018 also reported a frequency of vertigo of 15% and 12%, respectively, in otorhinolaryngology and neurology outpatient clinics (8).

In our clinic, patients with complaints of dizziness or vertigo, underwent vital sign checking, complete physical ENT examination, including otoscopy, as well as vestibular examination (Romberg, Sharpened Romberg, GANS sensory organization performance, Fukuda stepping test, head impulse test, Dix Hallpike, and cerebellar coordination test). The patients were further tested for audiology examination if they suffered hearing loss recently or simultaneously due the vertigo attacks. Non-vestibular vertigo diagnosed when all the tests were negative. Vestibular vertigo was differentiated between BPPV and non-BPPV based on the vestibular examination results, and the treatment was given appropriate to the diagnosis. The patients were further referred to an ENT specialist for the management of peripheral vertigo, and a neurologist for central vertigo.

Gender in this study showed that there were more female than male patients, ie. 81 females (65.85%) and 42 males (34.15%) (Table 1). Previous research also found that from 101 vertigo patients who were treated at OPD, 35 (31.65%) were male patients and 66 (65.35%) female patients (8).

The distribution of diagnoses according to ICD-10 in this study showed that as many as 101 patients (72.93%) had peripheral vertigo, 10 patients (8.13%) had central vertigo, and the remaining 11 patients (8.94%) had dizziness. This was not much different from a previous study, where peripheral vertigo was diagnosed as much as 78.23% while central vertigo was 22.77% (8).

The most frequent diagnosis of peripheral vertigo was other peripheral vertigo in 46 patients (37.40%), followed by disorder of vestibular function, unspecified in 19 patients (15.45%), BPPV in 18 (14.63%), Meniere's disease in 11 patients (8.94%), and the rest were vestibular neuritis in 8 patients (6.50%) (Table I). These figures were different from previous studies where BPPV was the most common cause of peripheral vertigo, which was 28.4% of the patients (9). The difference was because in this study patients with vertigo with any other cause (such as cerumen, otitis media, or other ear disorders), other than Meniere's disease, BPPV, and vestibular neurinitis, were diagnosed as other peripheral vertigo, characterized by negative Dix-Hallpike test result.

**Table V: PTA distribution in right and left ears**

| ICD 10 | Right Ear Audiogram | | | | | | Left Ear Audiogram | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Normal Hearing (PTA) | | | Hearing Loss (PTA) | | | Normal Hearing (PTA) | | | Hearing Loss (PTA) | | |
| | **N** | **Mean** | **SD** | **N** | **Mean** | **SD** | **N** | **Mean** | **SD** | **N** | **Mean** | **SD** |
| h81.0 | 6 | 17.92 | 2.92 | 5 | 63.75 | 34.85 | 5 | 17.30 | 3.80 | 6 | 75.00 | 37.72 |
| h81.1 | 8 | 19.06 | 3.12 | 7 | 40.18 | 7.37 | 7 | 18.39 | 2.57 | 8 | 41.88 | 14.16 |
| h81.2 | 3 | 17.08 | 3.15 | 2 | 35.63 | 0.88 | 2 | 17.50 | 5.30 | 3 | 63.92 | 33.42 |
| h81.3 | 25 | 17.81 | 4.23 | 15 | 45.90 | 27.46 | 30 | 17.39 | 4.48 | 10 | 39.50 | 12.75 |
| h81.4 | 3 | 15.83 | 3.82 | 6 | 81.67 | 36.86 | 4 | 18.75 | 2.70 | 5 | 65.50 | 41.12 |
| h81.9 | 11 | 20.23 | 4.29 | 7 | 56.36 | 36.61 | 11 | 16.89 | 5.08 | 7 | 75.00 | 17.60 |
| r42 | 6 | 17.92 | 7.01 | 3 | 40.00 | 10.90 | 7 | 17.93 | 4.19 | 2 | 35.00 | 1.77 |
| Total | 62 | 18.29 | 4.24 | 45 | 52.54 | 29.93 | 66 | 17.55 | 4.13 | 41 | 55.96 | 28.01 |

A total of 10 patients (8.13%) were diagnosed with cental vertigo, 4 patients with vestibular schwanomma, 2 patients with cerebelar lesion, 2 patients with vascular related complaints, 1 patient was epileptogenic, and 1 patient had head-trauma related vertigo. MRI findings in central vertigo patients showed that 4 were positive of CPA tumor. The patients diagnosed with vestibular schwanomma had unilateral severe hearing loss, while cerebral lesion patients had bilateral hearing loss.

Vertigo patients in the emergency room had acute and more severe symptoms (10). Another study found that inpatients with vertigo were diagnosed with Posterior Circulation Ischemia (59.89%), BPPV (16.04%), Meniere's disease (1.6%), and sudden hearing loss (1.07%) (11). In this study, most of the vertigo patients had an age range of 41-60 years, with a mean of 48.46 ± 14.592 (Table 2). This was in accordance with a previous study which reported that the highest incidence of vertigo was at the age of 40-49 years (12).

The most common hearing loss in vertigo patients was SNHL type (25 right ears or in 20.33% and 28 left ears in 22.76%) (Table 3). A previous study had shown that disorders that accompany SNHL-type hearing loss included Meniere's disease, vestibular neuritis, labyrinthitis, sudden deafness, and acoustic neurinoma. On the other hand, vertigo that accompanies CHL and MHL types of hearing loss can be caused by several diseases, including complications from otitis media, otosclerosis, or abnormalities in the middle ear. (12)

A number of 45 patients with vertigo (36.59%) had normal hearing, 29 patients (23.58%) had unilateral hearing loss and 33 (26.83%) had bilateral hearing loss (Table 4). A previous study had also found that 30-60% of patients with Sudden Sensorineural Hearing Loss (SSHL) suffered from vestibular disorders in addition to cochlear dysfunction (13).

The mean PTA value of vertigo patients with normal hearing was 18.29 ± 4.24 dB in right ear and 17.55 ± 4.13 dB in left ear. The mean PTA vertigo with hearing loss was 52.54 ± 29.93 dB in right ear and 55.96 ± 28.01 in left ear (Table 5). A previous study found that 58.39% of 149 Unilateral SNHL patients experienced vertigo, with PTA 88.81±21.74 dB, 80.03±24.76 dB, 90.00±22.21 dB, and 93.45±19.81 dB, respectively at low, moderate and high frequencies (13). PTA rates differed because the study included only patients with SNHL.

## CONCLUSION

The majority of patients were diagnosed with other peripheral vertigo. There were more female patients than male patients. The patients were mostly between 41-60 years old. The majority of vertigo patients had normal hearing. The most common hearing loss was SNHL type with mean PTA of 52.54 dB in right ear and 55.96 dB in left ear.

## REFERENCES


1. Newman-Toker D, Santina C, Blitz A. Vertigo and hearing loss. In: Masdeu J, Gonzales R, eds. handbook of clinical neurology. Vol 136. 1st ed. Baltimore: Elsevier BV;2016.p.905-21. doi:10.1016/B978-0-444-53486-6.00046-6
2. Sandhu JS, Rea PA. Clinical examination and management of the dizzy patient. Br J Hosp Med. 2016;77(12):692-8. doi: 10.12968/hmed.2016.77.12.692.
3. Seidel DU, Park JJH, Sesterhenn AM, Kostev K. Diagnoses of dizziness and vertigo-related disorders in ENT practices in Germany. Otol Neurotol. 2018;39(4):474-80. doi: 10.1097/MAO.0000000000001755.
4. Lee A. Diagnosing the cause of vekil rtigo: A practical approach. Hong Kong Med J. 2012;18(4):327-32.
5. Neuhauser HK. The epidemiology of dizziness and vertigo. In: Furman JM, Lempert T, eds. handbook of clinical neurology. 1st ed.Vol 137. Berlin: Elsevier BV;2016. p. 67-82. doi:10.1016/B978-0-444-63437-5.00005-4
6. Omron R. Peripheral vertigo. Emerg Med Clin North Am. 2019;37(1):11-28. doi:10.1016/j.emc.2018.09.004
7. Guilemany JM, Martнnez P, Prades E, Sacudo I, Espaca R, Cuchi A. Clinical and epidemiological study of vertigo at outpatient clinic.Acta Otolaryngol. 2004;124(1):49-52. doi:10.1080/00016480310002122
8. Sarıca S, İnanç Y. An assessment of vertigo patients presenting to the otorhinolaryngology and neurology outpatient clinics. Eur Res J. 2018;5(4):594-8. doi: 10.7861/clinmed.2019-0156.
9. Somefun OA, Giwa OS, Bamgboye BA, Irene I, Abdul A. Vestibular disorders among adults in a tertiary hospital in Lagos, Nigeria. Eur Arch Oto-Rhino-Laryngology. 2010;267(10):1515-21. doi: 10.1007/s00405-010-1272-5.
10. Parker IG, Hartel G, Paratz J, Choy NL, Rahmann A. A systematic review of the reported proportions of diagnoses for dizziness and vertigo. Otol Neurotol. 2019;40(1):6-15. doi: 10.1097/MAO.0000000000002044.
11. Zhang Y, Chen X, Wang X, Cao L, Dong Z, Zhen J, et al. A clinical epidemiological study in 187 patients with vertigo. Cell Biochem Biophys. 2011;59(2):109-12. doi: 10.1007/s12013-010-9120-1.
12. Sunitha M, Asokan L, Sambandan AP. Vertigo: Incidences, diagnosis and its relations with hearing loss. Indian J Otolaryngol Head Neck Surg. 2019;71:1282-6. doi: 10.1007/s12070-018-1315-6
13. Niu X, Zhang Y, Zhang Q, Xu X, Han P, Cheng Y, et al.

The relationship between hearing loss and vestibular dysfunction in patients with sudden sensorineural hearing loss. Acta Otolaryngol. 2016;136(3):225-31. doi: 10.3109/00016489.2015.1110750