



Document details

< Back to results | 1 of 1

↗ Export ↴ Download 🖨 Print ✉ E-mail 📄 Save to PDF ☆ Add to List More... >

[Full Text](#) View at Publisher

Pesquisa Brasileira em Odontopediatria e Clinica Integrada [Open Access](#)
Volume 20, 2020, Article number e4993

Knowledge, attitude and practice regarding pertussis among a public university students in Malaysia (Article) [\(Open Access\)](#)

Basir, N.A.B.A.^a, Rahman, N.A.A.^b, Haque, M.^c ✉ 👤

^aDepartment of Biomedical Science, Kulliyyah of Allied Health Sciences, International Islamic University Malaysia, Pahang, Malaysia

^bDepartment of Physical Rehabilitation Sciences, Kulliyyah of Allied Health Sciences, International Islamic University Malaysia, Pahang, Malaysia

^cFaculty of Medicine and Defence Health, National Defence University of Malaysia, Kuala Lumpur, Malaysia

Abstract

↕ [View references \(46\)](#)

Objective: To study the knowledge, attitude, and practice (KAP) regarding pertussis among students in a public university in Malaysia. **Material and Methods:** This study was a cross-sectional study using convenience sampling to recruit 171 respondents. The data was collected using a self-administered questionnaire comprised of four different parts: the socio-demographic data, the knowledge, the attitude and the practice towards the prevention of pertussis. The data were analyzed using correlation, independent ttest, and ANOVA according to the different study objectives and types of data. **Results:** More than half of the respondents (67.8%) indicated that they had heard about pertussis. The school or university (59.6%) was the most common source of information, followed by Internet (46.2%). The most of the respondents (43.9%) possessed moderate knowledge regarding pertussis and knew that *Bordetella pertussis* is the causative agent of pertussis (76.0%). A significant positive correlation between knowledge regarding pertussis with age ($p=0.023$) was observed, however, there was no association between age with attitude and practice ($p=0.272$ and 0.131 , respectively). Gender and marital status did not influence the KAP regarding pertussis; nevertheless, significantly different between different faculties. **Conclusion:** Students from the Faculty of Medicine had the highest knowledge scores, while the students from the Faculty of Nursing had the most top attitude and practice scores compared to students from another faculty. The students from the public university generally had a good level of KAP regarding pertussis. © 2020, Association of Support to Oral Health Research (APESB). All rights reserved.

SciVal Topic Prominence ⓘ

Topic: Whooping Cough | Bordetella Pertussis | Pertussis Vaccine

Prominence percentile: 97.061 ⓘ

Author keywords

Attitudes Bordetella pertussis Health knowledge Practice Universities

Indexed keywords

EMTREE drug terms: azithromycin clarithromycin erythromycin ivermectin mebendazole

EMTREE medical terms: adult Article attitude to health Bordetella bronchiseptica Bordetella parapertussis Bordetella pertussis convenience sample coughing cross-sectional study data analysis disease transmission female health care practice human knowledge Malaysia male Mycobacterium tuberculosis pertussis reliability sexual intercourse sneezing Streptococcus pneumoniae university student vaccination vomiting

Metrics ⓘ [View all metrics >](#)



PlumX Metrics

Usage, Captures, Mentions, Social Media and Citations beyond Scopus.

Cited by 0 documents

Inform me when this document is cited in Scopus:

[Set citation alert >](#)

[Set citation feed >](#)

Related documents

Pertussis in infants and the resurgence of a vaccine preventable disease: What to do?

Fedele, G. , Stefanelli, P. (2017) *Annali dell'Istituto Superiore di Sanita*

Trends and costs of pertussis hospitalizations in Portugal, 2000 to 2015: from 0 to 95 years old

Oliveira, S.M. , Gonçalves-Pinho, M. , Freitas, A. (2018) *Infectious Diseases*

Use of acellular pertussis vaccines in the United States: can we do better?

Klein, N.P. , Zerbo, O. (2017) *Expert Review of Vaccines*

[View all related documents based on references](#)

[Find more related documents in Scopus based on:](#)

[Authors >](#) [Keywords >](#)

Chemicals and CAS Registry Numbers:

azithromycin, 83905-01-5, 117772-70-0, 121470-24-4; clarithromycin, 81103-11-9; erythromycin, 114-07-8, 70536-18-4; ivermectin, 70288-86-7; mebendazole, 31431-39-7

ISSN: 15190501

Source Type: Journal

Original language: English




DOI: 10.1590/pboci.2020.002

Document Type: Article

Publisher: Association of Support to Oral Health Research (APESB)

References (46)

[View in search results format >](#)

All [Export](#)  Print  E-mail  Save to PDF [Create bibliography](#)

-
- 1 Higgs, R., Higgins, S.C., Ross, P.J., Mills, K.H.G.
Immunity to the respiratory pathogen *Bordetella pertussis* ([Open Access](#))

(2012) *Mucosal Immunology*, 5 (5), pp. 485-500. Cited 143 times.
doi: 10.1038/mi.2012.54

[View at Publisher](#)
-
- 2 Klein, N.P., Bartlett, J., Rowhani-Rahbar, A., Fireman, B., Baxter, R.
Waning protection after fifth dose of acellular pertussis vaccine in children

(2012) *New England Journal of Medicine*, 367 (11), pp. 1012-1019. Cited 345 times.
<http://www.nejm.org/doi/pdf/10.1056/NEJMoa1200850>
doi: 10.1056/NEJMoa1200850

[View at Publisher](#)
-
- 3 Kilgore, P.E., Salim, A.M., Zervos, M.J., Schmitt, H.-J.
Pertussis: Microbiology, disease, treatment, and prevention ([Open Access](#))

(2016) *Clinical Microbiology Reviews*, 29 (3), pp. 449-486. Cited 118 times.
<http://cmr.asm.org/content/29/3/449.full.pdf>
doi: 10.1128/CMR.00083-15

[View at Publisher](#)
-
- 4 Gabutti, G., Azzari, C., Bonanni, P., Prato, R., Tozzi, A.E., Zanetti, A., Zuccotti, G.
Pertussis: Current perspectives on epidemiology and prevention

(2015) *Human Vaccines and Immunotherapeutics*, 11 (1), pp. 108-117. Cited 28 times.
<http://www.tandfonline.com/doi/pdf/10.4161/hv.34364>
doi: 10.4161/hv.34364

[View at Publisher](#)
-
- 5 Suryadevara, M., Domachowske, J.B.
Prevention of pertussis through adult vaccination ([Open Access](#))

(2015) *Human Vaccines and Immunotherapeutics*, 11 (7), pp. 1744-1747. Cited 11 times.
<http://www.tandfonline.com/loi/khvi20>
doi: 10.1080/21645515.2015.1038442

[View at Publisher](#)
-
- 6 (2010) *Pertussis vaccines: WHO position paper*. Cited 7 times.
Geneva: World Health Organization, Available at, [Accessed on November 18, 2018]
www.who.int/wer/2010/wer8540.pdf
-

7 Falco, M.
10 infants' dead in California whooping cough outbreak. Cited 2 times.
CNN Health, Available at, [Accessed on November 18, 2018]
<http://edition.cnn.com/2010/HEALTH/10/20/california.whooping.cough/index.html>

8 Plotkin, S.A.
The pertussis problem ([Open Access](#))

(2014) *Clinical Infectious Diseases*, 58 (6), pp. 830-833. Cited 69 times.
www.journals.uchicago.edu/CID/home.html
doi: 10.1093/cid/cit934

[View at Publisher](#)

9 Sawyer, M.H.
The pertussis problem and a possible solution: Will parents go along?

(2016) *JAMA Pediatrics*, 170 (5), pp. 421-422. Cited 3 times.
<http://archpedi.jamanetwork.com/data/Journals/PEDS/935260/ped160004.pdf>
doi: 10.1001/jamapediatrics.2016.0157

[View at Publisher](#)

10 Cherry, J.D.
The present and future control of pertussis ([Open Access](#))

(2010) *Clinical Infectious Diseases*, 51 (6), pp. 663-667. Cited 94 times.
doi: 10.1086/655826

[View at Publisher](#)

11 Liang, J.L., Tiwari, T., Moro, P., Messonnier, N.E., Reingold, A., Sawyer, M., Clark, T.A.
Prevention of pertussis, tetanus, and diphtheria with vaccines in the United States: Recommendations of the Advisory Committee on Immunization Practices (ACIP)
([Open Access](#))

(2018) *MMWR Recommendations and Reports*, 67 (2). Cited 88 times.
<https://www.cdc.gov/mmwr/volumes/67/rr/pdfs/rr6702a1-H.pdf>
doi: 10.15585/mmwr.rr6702a1

[View at Publisher](#)

12 Zepp, F., Heininger, U., Mertsola, J., Bernatowska, E., Guiso, N., Roord, J., Tozzi, A.E., (...), Van Damme, P.
Rationale for pertussis booster vaccination throughout life in Europe

(2011) *The Lancet Infectious Diseases*, 11 (7), pp. 557-570. Cited 177 times.
doi: 10.1016/S1473-3099(11)70007-X

[View at Publisher](#)

13 Libster, R., Edwards, K.M.
Re-emergence of pertussis: what are the solutions?

(2012) *Expert review of vaccines*, 11 (11), pp. 1331-1346. Cited 56 times.
doi: 10.1586/erv.12.118

[View at Publisher](#)

14 Dalby, T., Andersen, P.H., Hoffmann, S.
Epidemiology of pertussis in Denmark, 1995 to 2013 ([Open Access](#))

(2016) *Eurosurveillance*, 21 (36). Cited 17 times.
<http://www.eurosurveillance.org/images/dynamic/EE/V21N36/art22574.pdf>
doi: 10.2807/1560-7917.ES.2016.21.36.30334

[View at Publisher](#)

- 15 Heininger, U., André, P., Chlibek, R., Kristufkova, Z., Kutsar, K., Mangarov, A., Mészner, Z., (...), Zavadská, D.
Comparative epidemiologic characteristics of pertussis in 10 Central and Eastern European countries, 2000-2013 ([Open Access](#))
- (2016) *PLoS ONE*, 11 (6), art. no. e0155949. Cited 19 times.
<http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0155949>
doi: 10.1371/journal.pone.0155949
- [View at Publisher](#)
-
- 16 Althouse, B.M., Scarpino, S.V.
Asymptomatic transmission and the resurgence of *Bordetella pertussis* ([Open Access](#))
- (2015) *BMC Medicine*, 13 (1), art. no. 146. Cited 99 times.
<http://www.biomedcentral.com/bmcmed/>
doi: 10.1186/s12916-015-0382-8
- [View at Publisher](#)
-
- 17 Ghotaslou, R., Asl, Y.M.
Seroepidemiology of pertussis disease in Asia: A literature review
- (2017) *Annals of Tropical Medicine and Public Health*, 10 (6), pp. 1425-1431. Cited 3 times.
<http://www.atmph.org>
doi: 10.4103/ATMPH.ATMPH-198-17
- [View at Publisher](#)
-
- 18 Skoff, T.H., Kenyon, C., Cocoros, N., Liko, J., Miller, L., Kudish, K., Baumbach, J., (...), Martin, S.W.
Sources of Infant pertussis infection in the United States ([Open Access](#))
- (2015) *Pediatrics*, 136 (4), pp. 635-641. Cited 81 times.
<http://pediatrics.aappublications.org/content/136/4/635.full.pdf+html>
doi: 10.1542/peds.2015-1120
- [View at Publisher](#)
-
- 19 Warfel, J.M., Zimmerman, L.I., Merkel, T.J.
Acellular pertussis vaccines protect against disease but fail to prevent infection and transmission in a nonhuman primate model ([Open Access](#))
- (2014) *Proceedings of the National Academy of Sciences of the United States of America*, 111 (2), pp. 787-792. Cited 302 times.
<http://www.pnas.org/content/111/2/787.full.pdf+html>
doi: 10.1073/pnas.1314688110
- [View at Publisher](#)
-
- 20 De Cellès, M.D., Magpantay, F.M.G., King, A.A., Rohani, P.
The pertussis enigma: Reconciling epidemiology, immunology and evolution ([Open Access](#))
- (2016) *Proceedings of the Royal Society B: Biological Sciences*, 283 (1822), art. no. 20152309. Cited 42 times.
<http://rspb.royalsocietypublishing.org/content/royprsb/283/1822/20152309.full.pdf>
doi: 10.1098/rspb.2015.2309
- [View at Publisher](#)
-
- 21 WHO Vaccine-Preventable Diseases: Monitoring System
(2018) *2018 Global Summary*. Cited 27 times.
Incidence Time Series for Malaysia (MYS), Available at, [Accessed on November 18, 2018]
http://apps.who.int/immunization_monitoring/globalsummary/incidences?c=MYS
-

- 22 Wilder-Smith, A., Boudville, I., Earnest, A., Heng, S.L., Bock, H.L.
Knowledge, attitude, and practices with regard to adult pertussis vaccine booster in travelers
(2007) *Journal of Travel Medicine*, 14 (3), pp. 145-150. Cited 13 times.
doi: 10.1111/j.1708-8305.2007.00109.x
[View at Publisher](#)
-
- 23 Wirsing Von König, C.H., Halperin, S., Riffelmann, M., Guiso, N.
Pertussis of adults and infants
(2002) *Lancet Infectious Diseases*, 2 (12), pp. 744-750. Cited 356 times.
<http://www.journals.elsevier.com/the-lancet-infectious-diseases>
doi: 10.1016/S1473-3099(02)00452-8
[View at Publisher](#)
-
- 24 Wang, K., Fry, N.K., Campbell, H., Amirthalingam, G., Harrison, T.G., Mant, D., Harnden, A.
Whooping cough in school age children presenting with persistent cough in UK primary care after introduction of the preschool pertussis booster vaccination: Prospective cohort study ([Open Access](#))
(2014) *BMJ (Online)*, 348, art. no. g3668. Cited 24 times.
http://www.bmj.com/highwire/filestream/703385/field_highwire_article_pdf/0/bmj.g3668
doi: 10.1136/bmj.g3668
[View at Publisher](#)
-
- 25 Nunnally, J.C.
(1978) *Psychometric Theory*. Cited 57688 times.
2nd. ed. New York: McGraw-Hill
-
- 26 Barman, M.P., Hazarika, J., Kalita, A.
Reliability and validity of Assamese version of EORTC QLQ-C30 questionnaire for studying the quality of life of cancer patients of Assam
(2012) *World Applied Sciences Journal*, 17 (5), pp. 672-678. Cited 10 times.
[http://idosi.org/wasj/wasj17\(5\)12/20.pdf](http://idosi.org/wasj/wasj17(5)12/20.pdf)
-
- 27 Khan, Y.H., Sarriff, A., Khan, A.H., Mallhi, T.H.
Knowledge, attitude and practice (KAP) survey of osteoporosis among students of a tertiary institution in Malaysia ([Open Access](#))
(2014) *Tropical Journal of Pharmaceutical Research*, 13 (1), pp. 155-162. Cited 22 times.
http://www.tjpr.org/vol13_no1/2014_13_1_22_download.html
doi: 10.4314/tjpr.v13i1.22
[View at Publisher](#)
-
- 28 Rumsey, D.J.
(2016) *Statistics for Dummies*, p. 416.
2nd. ed. New York: John Wiley & Sons Inc
-
- 29 Donnan, E.J., Fielding, J.E., Rowe, S.L., Franklin, L.J., Vally, H.
A cross sectional survey of attitudes, awareness and uptake of the parental pertussis booster vaccine as part of a cocooning strategy, Victoria, Australia ([Open Access](#))
(2013) *BMC Public Health*, 13 (1), art. no. 676. Cited 16 times.
doi: 10.1186/1471-2458-13-676
[View at Publisher](#)
-

- 30 Granville-Garcia, A.F., Rocha, E.S., De Sousa, R.V., Martins, V.M., De L. Targino Massoni, A.C., Paiva, S.M.

Knowledge of occupational diseases and immunization among healthcare students

(Open Access)

(2011) *Revista Odonto Ciencia*, 26 (3), pp. 215-221. Cited 2 times.

<http://revistaseletronicas.pucrs.br/fo/ojs/index.php/fo/article/view/9283/6881>

doi: 10.1590/S1980-65232011000300004

[View at Publisher](#)

- 31 Mo, P.

The use of Internet for health education

(2012) *J Biosafety Health Educ*, 1, p. e102. Cited 11 times.

<https://doi.org/10.4172/2332-0893.1000e102>

- 32 Tonsaker, T., Bartlett, G., Trpkov, C.

Health information on the internet: Gold mine or minefield?

(2014) *Canadian Family Physician*, 60 (5), pp. 407-408+419-420. Cited 59 times.

<http://www.cfp.ca/content/60/5/407.full.pdf+html>

- 33 Ko, H.S., Jo, Y.S., Kim, Y.H., Park, Y.G., Moon, H.B., Lee, Y.

Knowledge, attitudes, and acceptability about influenza vaccination in Korean women of childbearing age

(2015) *Obstet Gynecol Sci*, 58 (2), pp. 81-89. Cited 6 times.

<https://doi.org/10.5468/ogs.2015.58.2.81>

- 34 Javed, H., Tahir, Z., Hashmi, H.J., Jamil, N.

A cross-sectional study about knowledge and attitudes toward multidrug-resistant and extensively drug-resistant tuberculosis in a high-burden drug-resistant country

(Open Access)

(2016) *International Journal of Mycobacteriology*, 5 (2), pp. 128-134. Cited 8 times.

<http://www.journals.elsevier.com/international-journal-of-mycobacteriology/>

doi: 10.1016/j.ijmyco.2015.12.004

[View at Publisher](#)

- 35 Dawood, O.T., Hassali, M.A., Saleem, F.

Factors affecting knowledge and practice of medicine use among the general public in the State of Penang, Malaysia

(2017) *Journal of Pharmaceutical Health Services Research*, 8 (1), pp. 51-57. Cited 11 times.

[http://onlinelibrary.wiley.com/journal/10.1111/\(ISSN\)1759-8893](http://onlinelibrary.wiley.com/journal/10.1111/(ISSN)1759-8893)

doi: 10.1111/jphs.12167

[View at Publisher](#)

- 36 Goins, W.P., Schaffner, W., Edwards, K.M., Talbot, T.R.

Healthcare workers' knowledge and attitudes about pertussis and pertussis vaccination

(2007) *Infection Control and Hospital Epidemiology*, 28 (11), pp. 1284-1289. Cited 32 times.

doi: 10.1086/521654

[View at Publisher](#)

- 37 Ismail, Z.

(2009) *A whoop of a cough*

The Star Online, Available at, [Accessed on November 20, 2018]

<https://www.thestar.com.my/lifestyle/health/fitness/2009/01/18/a-whoop-of-a-cough/>

- 38 Wu, L.A., Kanitz, E., Crumly, J., D'Ancona, F., Strikas, R.A.
Adult immunization policies in advanced economies: Vaccination recommendations, financing, and vaccination coverage (Open Access)
(2013) *International Journal of Public Health*, 58 (6), pp. 865-874. Cited 19 times.
<http://www.springerlink.com/content/1661-8564/>
doi: 10.1007/s00038-012-0438-x
View at Publisher
-
- 39 Fernandes, E.G., Rodrigues, C.C.M., Sartori, A.M.C., De Soárez, P.C., Novaes, H.M.D.
Economic evaluation of adolescents and adults' pertussis vaccination: A systematic review of current strategies (Open Access)
(2019) *Human Vaccines and Immunotherapeutics*, 15 (1), pp. 14-27. Cited 5 times.
<http://www.tandfonline.com/loi/khvi20>
doi: 10.1080/21645515.2018.1509646
View at Publisher
-
- 40 Visser, O., Hautvast, J.L.A., Van Der Velden, K., Hulscher, M.E.J.L.
Intention to accept pertussis vaccination for cocooning: A qualitative study of the determinants (Open Access)
(2016) *PLoS ONE*, 11 (6), art. no. e0155861. Cited 5 times.
<http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0155861>
doi: 10.1371/journal.pone.0155861
View at Publisher
-
- 41 Ariyaratne, M.H.J.D., Gunasekara, T.D.C.P., Weerasekara, M.M., Kottahachchi, J., Kudavidanage, B.P., Fernando, S.S.N.
Knowledge, attitudes and practices of hand hygiene among final year medical and nursing students at the University of Sri Jayewardenepura
(2013) *Sri Lankan J Infect Dis*, 3 (1), pp. 15-25. Cited 18 times.
<https://doi.org/10.4038/sljid.v3i1.4761>
-
- 42 Prevention. Strategies for Seasonal Influenza in Healthcare Settings
(2018) *Guidelines and Recommendations*. Cited 5 times.
Available at, [Accessed on November 20, 2018]
<https://www.cdc.gov/flu/professionals/infectioncontrol/healthcaresettings.htm>
-
- 43 Qualls, N., Levitt, A., Kanade, N., Wright-Jegede, N., Dopson, S., Biggerstaff, M., Reed, C., (...), Uzicanin, A.
Community mitigation guidelines to prevent pandemic influenza - United States, 2017 (Open Access)
(2017) *MMWR Recommendations and Reports*, 66 (1), pp. 1-34. Cited 65 times.
<https://www.cdc.gov/mmwr/volumes/66/rr/pdfs/rr6601.pdf>
doi: 10.15585/mmwr.rr6601a1
View at Publisher
-
- 44 Hoffait, M., Hanlon, D., Benninghoff, B., Calcoen, S.
Pertussis knowledge, attitude and practices among European health care professionals in charge of adult vaccination
(2011) *Human Vaccines*, 7 (2), pp. 197-201. Cited 17 times.
<http://www.landesbioscience.com/journals/vaccines/HoffaitHV7-2.pdf>
doi: 10.4161/hv.7.2.13918
View at Publisher

□ 45 Kim, K.-M., Kim, M.-A., Chung, Y.-S., Kim, N.-C.

Knowledge and performance of the universal precautions by nursing and medical students in Korea

(2001) *American Journal of Infection Control*, 29 (5), pp. 295-300. Cited 32 times.
<http://www.journals.elsevier.com/ajic-american-journal-of-infection-control/>
doi: 10.1067/mic.2001.114837

[View at Publisher](#)

□ 46 Abd Elaziz, K.M., Bakr, I.M.

Assessment of knowledge, attitude and practice of hand washing among health care workers in Ain Shams university hospitals in Cairo

(2009) *Journal of Preventive Medicine and Hygiene*, 50 (1), pp. 19-25. Cited 15 times.

🔍 Haque, M.; Unit of Pharmacology, Faculty of Medicine and Defence Health, Universiti Pertahanan Nasional Malaysia, Kem Perdana Sungai Besi, Kuala Lumpur, Malaysia; email:runurono@gmail.com

© Copyright 2020 Elsevier B.V., All rights reserved.

[< Back to results](#) | 1 of 1

[^ Top of page](#)

About Scopus

[What is Scopus](#)
[Content coverage](#)
[Scopus blog](#)
[Scopus API](#)
[Privacy matters](#)

Language

[日本語に切り替える](#)
[切换到简体中文](#)
[切换到繁體中文](#)
[Русский язык](#)

Customer Service

[Help](#)
[Contact us](#)

ELSEVIER

[Terms and conditions ↗](#) [Privacy policy ↗](#)

Copyright © Elsevier B.V. All rights reserved. Scopus® is a registered trademark of Elsevier B.V.

We use cookies to help provide and enhance our service and tailor content. By continuing, you agree to the use of cookies.

 RELX