

محمد شهزاد  
أستاذ مشارك بيولوجيا الفم  
كلية طب الأسنان جامعة

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## تعليم

- Dec 2002 – Dec 2007 **Bachelor of Dental Surgery (BDS)**  
Khyber College of Dentistry, University of Peshawar, Pakistan
- Sep 2010 – Jan 2015 **PhD (Dentistry Lab Studies)**  
University of Glasgow, United Kingdom
- Dec 2019 – Dec 2020 **Postdoctoral Fellowship**  
University of Reading, United Kingdom
- Sep 2021 – Dec 2023 **Master's in Health Professions Education (MHPE)** Khyber  
Medical University Peshawar, Pakistan

## خبرة

- July 2023 – Till date **Associate Professor Oral Biology**  
Faculty of Dentistry, Zarqa University, Jordan
- Sep 2021 – Till date **Senior Visiting Research Fellow**  
School of Biological Sciences, University of Reading, UK
- Feb 2021 – June 2023 **Associate Professor Oral Biology**  
Khyber Medical University, Peshawar, Pakistan
- March 2018 – Feb 2019 **PhD Research Coordinator**  
Khyber Medical University, Peshawar, Pakistan
- Sep 2015 – March 2017 **Director Sports (Additional Charge)**  
Khyber Medical University, Peshawar, Pakistan
- March 2016 – March 2018 **Member cum Secretary Board of Studies**  
Khyber Medical University, Peshawar, Pakistan
- Jan 2015 – Feb 2021 **Assistant Professor Biochemistry**  
Khyber Medical University, Peshawar, Pakistan
- Jan 2010 – Aug 2010 **Resident Trainee Prosthodontics**

- Dec 2007 – Dec 2008

### House Job (Dental internship)

Khyber College of Dentistry, Peshawar, Pakistan

## الاهتمامات البحثية

I am currently leading two research groups at Khyber Medical University Pakistan and Zarqa University Jordan (<https://rg.zu.edu.jo/omirg/>). Our research is multidisciplinary and focusses on how dietary intake and nutritional status impact the cross talk between the microbiome and immune system. Using basic, clinical and translational research methods, we are aiming to unravel the complex interplay between the microbiome, nutrition and immunity in human health and disease and the enormous potential it holds in solving the most challenging issues of the developing world and its consequences. The ultimate goal of our research is to develop microbiome based, nutritional products aiming to enhance immunity and protect against chronic oral and systemic diseases.

## التعاون البحثي الدولي

1. School of Biological Sciences, University of Reading, UK: Professor Simon C Andrews; [s.c.andrews@reading.ac.uk](mailto:s.c.andrews@reading.ac.uk)
2. Department for Biomedical Research, University of Berne, Switzerland: Ziad Al Nabhani; [ziad.alnabhani@unibe.ch](mailto:ziad.alnabhani@unibe.ch)
3. Gastroenterology & Mucosal Immunology, University of Berne, Switzerland Prof. Dr. Benjamin Misselwitz; [benjamin.misselwitz@insel.ch](mailto:benjamin.misselwitz@insel.ch)
4. University of Chester, UK Prof. Dr. Basma Ellahi; [b.ellahi@chester.ac.uk](mailto:b.ellahi@chester.ac.uk)
5. Department of Human Nutrition, University of Glasgow, UK Dr. Ada Garcia; [Ada.Garcia@glasgow.ac.uk](mailto:Ada.Garcia@glasgow.ac.uk)
6. Emory University, USA Dr. Irene Yang; [irene.yang@emory.edu](mailto:irene.yang@emory.edu)
7. Faculty of Dentistry, King Abdul Aziz University, Saudi Arabia Nada Binmadi; [nmadi@kau.edu.sa](mailto:nmadi@kau.edu.sa)
8. New York University, Abu Dhabi (NYUAD), United Arab Emirates Muhammad Arshad, [ma5877@nyu.edu](mailto:ma5877@nyu.edu); Nizar Drou; [nd48@nyu.edu](mailto:nd48@nyu.edu)

## صناديق البحوث

Below is a list of research projects that I received/won as **Principal Investigator**. In this role, I am responsible for proposal writing, budget utilization, project execution and final report submission.

1. Exploring oral microbiome diversity and sources of variations among Jordanian adolescents: (**US\$ 6,000**), Deanship of Research, Zarqa University, Jordan
2. Malnutrition, Health and oral and gut microbiome in Pakistani Children from Newly Merged Districts of Khyber Pakhtunkhwa (MAGPACK): (**PKR 3.7 million**). National Institute of Health, Pakistan. F. No. NHCG-22/R274/RDC/KMU/
3. Dietary patterns, Nutritional status and their association with health and developmental outcomes in children from Agropastoral communities in Pakistan; a prospective cohort study. (**PKR 3.2 million**). Office of Research Innovation and Commercialization, KMU.
4. Potential role of oral and gut microbiome in Tuberculosis (**PKR 2.15 million**). Higher Education Commission Pakistan. Grant No: NO: 10289/KPK/NRPU/R&D/HEC/2018.

5. Bacterial biofilm diversity and prevalence of antibiotic resistance genes in water supply system of Peshawar and its impact on human health **(PKR 2.79 million)**. Higher Education Commission Pakistan. Grant No: NO: 5873/KPK/NRPU/R&D/HEC/2016.
6. Oral Microbiome diversity and functional potential of stunted, obese and normal weight children residing in Agropastoral communities of District Swat, Pakistan **(PKR: 1 million)**. Office of Research Innovation and Commercialization, KMU.

I am also worked/working as **Co-principal investigator** in several research projects where my role is helping and supporting the principal investigator in my areas of expertise and achieving project goals.

1. Stunting prevention in Kurram Agency FATA; a multi-sectoral approach **(PKR 42 million)**. United Nations World Food Program (WFP) 2017 – 20.
2. Impact of zinc deficiency on composition and activity of the human gut microbiome; a missing link in malnutrition? University of Reading **(GBP 8000)**.
3. Developing closer interaction of Universities with School Children and Raise Awareness Regarding Careers in Allied Health Sciences **(PKR 0.9 million)**. Higher Education Commission Pakistan. Grant No: SIOP-025-17.
4. Developing closer interaction of universities with school children and raise awareness regarding health and hygiene **(PKR 0.5 million)**. Higher Education Commission Pakistan.
5. Investigation into utility of saliva as a biological sample for assessment of iron status **(PKR 0.5 million)** Higher Education Commission Pakistan. Grant No: SRGP-025-18.

## الخبرة البحثية السابقة

My research work during PhD project entitled “Polyphenols and Oral Health” involved screening of different polyphenolic molecules on growth and biofilm formation by several pathogenic bacterial and fungal species that are commonly implicated in oral diseases (caries, periodontitis & oral candidiasis). Part of my PhD research also involved evaluation of polyphenols metabolism and bioavailability (both oral and systemic) following ingestion of polyphenol rich foods in human. The data obtained from my PhD research is published in international, impact factor journals and also presented in various local and international conferences.

## المنشورات البحثية والتأثير

So far, I have **46** publications in peer-reviewed journals, of which, 40 are Scopus indexed. The cumulative impact factor of publications is **> 170**, H-index **18**, and total number of citations are **> 1400**.

- Google Scholar ID: <https://scholar.google.com/citations?hl=en&user=reiWXMMAAAAJ>
- ResearchGate ID: <https://www.researchgate.net/profile/Muhammad-Shahzad-80>
- Scopus ID: <https://www.scopus.com/authid/detail.uri?authorId=58733244100>
- ORCID ID: <https://orcid.org/0000-0001-6565-1777>

## قائمة المنشورات

1. **Shahzad, M<sup>\*</sup>**, Jamil, B., Bushra, M. et al. Gender-based differences in the representation and experiences of academic leaders in medicine and dentistry: a mixed method study from Pakistan. BMC Med Educ 24, 885 (2024). <https://doi.org/10.1186/s12909-024-05811-6>
2. **Shahzad, M.**, Saeedullah, A., Shabbir Khan, M., Ali Ahmad, H., Iddrissu, I., Andrews, S.C., **2024**. 16S rRNA gene amplicon sequencing data from the gut microbiota of adolescent Afghan refugees. Data in Brief 55, 110636. <https://doi.org/10.1016/j.dib.2024.110636>

3. **Shahzad M\***, Saeed M, Amin H, Binmadi N, Ullah Z, Bibi S, Andrew SC\*. The oral microbiome of newly diagnosed tuberculosis patients; a pilot study. *Genomics*. 2024 Feb 29;116(2):110816. doi: 10.1016/j.ygeno.2024.110816. Epub ahead of print. PMID: 38431030.
4. Saeed, M., Asad, M., **Shahzad, M\***, Akram, M., Khan, Z., **2024**. Biochemical composition of a smokeless tobacco product (NASWAR) used in Pakistan. *Journal of King Saud University - Science* 36, 103168. <https://doi.org/10.1016/j.jksus.2024.103168>
5. Iddrisu I, Monteagudo-Mera A, Poveda C, **Shahzad M**, Walton GE, Andrews SC. A review of the effect of iron supplementation on the gut microbiota of children in developing countries and the impact of prebiotics. *Nutrition Research Reviews*. Published online **2024**:1-9. doi:10.1017/S0954422424000118
6. Ahmad I, Binmadi N, Afridi SG, Aljohani S, Shah I, Saidal A, **Shahzad M\***. Salivary Oxidative Stress and Antioxidant Capacity in Smokeless Tobacco (Naswar) Users. *Clin Cosmet Investig Dent*. 2023;15:121-132 <https://doi.org/10.2147/CCIDE.S415827>
7. Binmadi, N.; Alsharif, M.; Almazrooa, S.; Aljohani, S.; Akeel, S.; Osailan, S.; **Shahzad, M.**; Elias, W.; Mair, Y. Perineural Invasion Is a Significant Prognostic Factor in Oral Squamous Cell Carcinoma: A Systematic Review and Meta-Analysis. *Diagnostics* **2023**, *13*, 3339. <https://doi.org/10.3390/diagnostics13213339>
8. Zeeshan Kamal, **Muhammad Shahzad**, Tahir Ali Khan, Falak Niaz, Kajal Hayat. (2023). Oral Candidal Carriage and its Correlation with Salivary Oxidative Stress in Smokeless Tobacco Users. *Pakistan Journal of Medical & Health Sciences*, 17(05), 534. <https://doi.org/10.53350/pjmhs2023175534>
9. Ullah H, Aziz T, Sarwar A, Khan Z, **Shahzad M\***. Alharbi M Alsahammari A. Evaluating the bacterial diversity of smokeless tobacco product using shotgun metagenomic analysis. *Applied Ecology and Environmental Research* **2023**. 21(4):3045-3056.
10. Khan, K.; Qadir, A.; Trakman, G.; Aziz, T.; Khattak, M.I.; Nabi, G.; Alharbi, M.; Alshammari, A.; **Shahzad, M\***. Sports and Energy Drink Consumption, Oral Health Problems and Performance Impact among Elite Athletes. *Nutrients* **2022**, *14*, 5089. <https://doi.org/10.3390/nu14235089>
11. Aziz T, Xingyu H, Sarwar A, Naveed M, Shabbir MA, Khan AA, Ulhaq T, **Shahzad M**, Zhennai Y, Shami A, Sameeh MY, Alshareef SA, Tashkandi MA and Jalal RS (2023) Assessing the probiotic potential, antioxidant, and antibacterial activities of oat and soy milk fermented with *Lactiplantibacillus plantarum* strains isolated from Tibetan Kefir. *Front. Microbiol.* 14:1265188. doi: 10.3389/fmicb.2023.1265188
12. Raees M, Jamil B, Khan S, **Shahzad M**. Role of supervisor as clinical teacher – residents’ perspectives of postgraduate medical institute. *Professional Med J* 2023; 30(09):1208-1213. <https://doi.org/10.29309/TPMJ/2023.30.09.5466>
13. Ling L, Liu Y, Zhang X, Aziz T, **Shahzad M**, Sameeh MY, Wang Y, Cai C and Zhu Y (2023) Effect of Flammulina velutipes polysaccharides on the physicochemical properties of catfish surimi and myofibrillar protein oxidation during frozen storage. *Front. Nutr.* 10:1268580. doi: 10.3389/fnut.2023.126858
14. Aziz T, Naveed M, Makhdoom SI, Ali U, Mughal MS, Sarwar A, Khan AA, Zhennai Y, Sameeh MY, Dablood AS, Alharbi AA, **Shahzad M**, Alamri AS, Alhomrani M. Genome Investigation and Functional Annotation of *Lactiplantibacillus plantarum* YW11 Revealing Streptin and Ruminococcin-A as Potent Nutritive Bacteriocins against Gut Symbiotic Pathogens. *Molecules*. 2023; 28(2):491. <https://doi.org/10.3390/molecules28020491>
15. **Shahzad M\***, Andrews SC, Ul-Haq Z. Exploring the role of Microbiome in Susceptibility, Treatment Response and Outcome among Tuberculosis Patients from Pakistan: study protocol for a prospective cohort study (Micro-STOP) *BMJ Open* 2022;12:e058463. doi: 10.1136/bmjopen-2021-058463
16. Wang J, Aziz T, Bai R, Zhang X, **Shahzad M**, Sameeh MY, et al. Dynamic change of bacterial diversity, metabolic pathways, and flavor during ripening of the Chinese fermented sausage. *Front Microbiol.* 2022 ;13. Available from: <https://www.frontiersin.org/articles/10.3389/fmicb.2022.990606>
17. Khan, M.S.; Saeedullah, A.; Andrews, S.C.; Iqbal, K.; Qadir, S.A.; Shahzad, B.; Ahmed, Z.; **Shahzad, M\***. Adolescent Afghan Refugees Display a High Prevalence of Hyperhomocysteinemia and Associated Micronutrients Deficiencies Indicating an Enhanced Risk of Cardiovascular Disease in Later Life. *Nutrients* 2022, 14, 1751. <https://doi.org/10.3390/nu14091751>.
18. Shah, S.; Khan, A.; **Shahzad, M.**; Mokhtar, J.A.; Harakeh, S.; Kibria, Z.; Mehr, A.; Bano, B.; Ali, A.; Yousafzai, Y.M. Determinants of Response at 2 Months of Treatment in a Cohort of Pakistani Patients with Pulmonary Tuberculosis. *Antibiotics* **2022**, *11*, 1307. <https://doi.org/10.3390/antibiotics11101307>

19. Saleem A, Afzal M, Naveed M, Makhdoom SI, Mazhar M, Aziz T, Khan AA, Kamal Z, **Shahzad M**, Alharbi M, Alshammari A. HPLC, FTIR and GC-MS Analyses of Thymus vulgaris Phytochemicals Executing In Vitro and In Vivo Biological Activities and Effects on COX-1, COX-2 and Gastric Cancer Genes Computationally. *Molecules*. 2022; 27(23):8512. <https://doi.org/10.3390/molecules27238512>
20. S ur Rahman, M Zahid, AA Khan, T Aziz, Z Iqbal, W Ali, FF Khan, S Jamil, **Shahzad M**, Mehtab A, AbdulRehman A. Hepatoprotective effects of walnut oil and Caralluma tuberculata against paracetamol in experimentally induced liver toxicity in mice, *Acta Biochimica Polonica* 69 (4), 871-878
21. Hena Zahid, Mohsin Shahab, Shafiq ur Rahman, Zafar Iqbal, Ayaz Ali Khan, Tariq Aziz, Waqar Ali, Ghazala Yasmin Zamani, Saeed Ahmad, **Muhammad Shahzad**, Metab Alharbi, Abdulrahman Alshammari. Assessing the effect of walnut (juglans regia) and olive (olea europaea) oil against the bacterial strains found in Gut Microbiome. *Progress in Nutrition* 2022; Vol. 24, N. 3: e2022122 DOI: 10.23751/pn.v24i3.13311
22. Naveed, M.; Shabbir, M.A.; Ain, N.-u.; Javed, K.; Mahmood, S.; Aziz, T.; Khan, A.A.; Nabi, G.; **Shahzad, M.**; Alharbi, M.E.; Alharbi, M.; Alshammari, A. Chain-Engineering-Based De Novo Drug Design against MPXVgp169 Virulent Protein of Monkeypox Virus: A Molecular Modification Approach. *Bioengineering* **2023**, *10*, 11. <https://doi.org/10.3390/bioengineering10010011>
23. Aziz, T.; Naveed, M.; Sarwar, A.; Makhdoom, S.I.; Mughal, M.S.; Ali, U.; Yang, Z.; **Shahzad, M.**; Sameeh, M.Y.; Alruways, M.W.; Dablood, A.S.; Almalki, A.A.; Alamri, A.S.; Alhomrani, M. Functional Annotation of Lactiplantibacillus plantarum 13-3 as a Potential Starter Probiotic Involved in the Food Safety of Fermented Products. *Molecules* 2022, 27, 5399. <https://doi.org/10.3390/molecules27175399>
24. Naveed, M.; Sheraz, M.; Amin, A.; Waseem, M.; Aziz, T.; Khan, A.A.; Ghani, M.; **Shahzad, M.**; Alruways, M.W.; Dablood, A.S.; Elazzazy, A.M.; Almalki, A.A.; Alamri, A.S.; Alhomrani, M. Designing a Novel Peptide-Based MultiEpitope Vaccine to Evoke a Robust Immune Response against Pathogenic Multidrug-Resistant Providencia heimbachae. *Vaccines* 2022, 10, 1300. <https://doi.org/10.3390/vaccines10081300>
25. Naveed, M.; Makhdoom, S.I.; Ali, U.; Jabeen, K.; Aziz, T.; Khan, A.A.; Jamil, S.; **Shahzad, M.**; Alharbi, M.; Alshammari, A. Immunoinformatics Approach to Design Multi-Epitope-Based Vaccine against Machupo Virus Taking Viral Nucleocapsid as a Potential Candidate. *Vaccines* **2022**, *10*, 1732. <https://doi.org/10.3390/vaccines10101732>
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27. Naveed, M.; Bukhari, B.; Aziz, T.; Zaib, S.; Mansoor, M.A.; Khan, A.A.; **Shahzad, M.**; Dablood, A.S.; Alruways, M.W.; Almalki, A.A.; Alamri, A.S.; Alhomrani, M. Green Synthesis of Silver Nanoparticles Using the Plant Extract of Acer oblongifolium and Study of Its Antibacterial and Antiproliferative Activity via Mathematical Approaches. *Molecules* 2022, 27, 4226. <https://doi.org/10.3390/molecules27134226>
28. Muhammad Nisar Khan, Haleema Khan, **Muhammad Shahzad**, Muhammad Ibrahim, Muhammad Arif, Zeeshan Kibria, Usman Waheed, Noore Saba, Inayat Shah, Sumera, Yasar Mehmood Yousafzai: Seroprevalence of Sars-Cov-2 antibodies among eligible blood donors of Peshawar, Pakistan. *Am J Blood Res* 2022;12(3):88-96.
29. Tariq Aziz, Abid Sarwar, Zubaida Daudzai, Jasra Naseeb, Jalal Ud Din, Urooj Aftab, Ahsan Saidal, Mustajab Ghani , Ayaz Ali Khan, Sumaira Naz , **Muhammad Shahzad**, Haiyang Cui \* Lin Lin A\*. Conjugated fatty acids (cfas) production via various bacterial strains and their applications. A review. *J. Chil. Chem. Soc.*, 67, N°1 (2022)
30. Aziz T, Sarwar A, Naveed M, **Shahzad M**, Aqib Shabbir M, Dablood AS, Ud Din J, Ali Khan A, Naz S, Cui H, Lin L. Bio-Molecular analysis of selected food derived Lactiplantibacillus strains for CLA production reveals possibly a complex mechanism. *Food Res Int.* 2022 Apr;154:111031. doi: 10.1016/j.foodres.2022.111031. Epub 2022 Feb 17. PMID: 35337595.
31. Adil Hussain, Ayaz Ali Khan, Muhammad Ali, Ghazala Yasmin Zamani, Zafar Iqbal, Qarib Ullah, Javid Iqbal, **Muhammad Shahzad**, Tariq Aziz\*. In-vitro AND In-vivo Assessment of Toxic effects of Parthenium hysterophorus leaves extract. *J. Chil. Chem. Soc.*, 67, N°2 (2022).
32. Ahmad HA, Khan H, **Shahzad M**, Haq Z ul, Harake S, Yousafzai YM. Suspected reinfections of SARS-COV-2 in Khyber Pakhtunkhwa, Pakistan – analysis of province-wide testing database. *J Infect.* Available from: <https://doi.org/10.1016/j.jinf.2021.10.005>

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33. H Ullah, **M Shahzad** , F Saleem, T Ali, MK Azim, H Khan, J Ali, J Ahmed. Microbial Biofilm Diversity and Prevalence of Antibiotic Resistance Genes in Drinking Water Distribution System of Peshawar, Pakistan. *Water* **2021** 13 (13), 1788



34. **M Shahzad**, A Asif, S Inayat, A Kinza, J Brekhna, S Abdul. An observational study to assess satisfaction with multiresource peer assisted learning among postgraduate research students. *Rawal Medical Journal* 46 (2021) (3), 690 – 694
35. Iddrisu, I.; Monteagudo-Mera, A.; Poveda, C.; Pyle, S.; **Shahzad, M.**; Andrews, S.; Walton, G.E. Malnutrition and Gut Microbiota in Children. *Nutrients* **2021**, 13, 2727. <https://doi.org/10.3390/nu13082727>
36. Saeedullah A, Khan MS, Andrews SC, Iqbal K, Ul-Haq Z, Qadir SA, Haris Khan, Ishawu Iddrisu, **Muhammad Shahzad**<sup>\*</sup>. Nutritional Status of Adolescent Afghan Refugees Living in Peshawar, Pakistan. *Nutrients* **2021**;13(9). <https://doi.org/10.3390/nu13093072>
37. Shahzad B, **Shahzad M\***, Khan MJ, Khan S, Bibi H. Plasma vitamin D status and associated factors among pregnant women of Peshawar, Khyber Pakhtunkhwa, Pakistan: a pilot study. *Khyber Med Univ J* **2019**;11(4):226-30. DOI: 10.35845/kmu.j.2019.19274
38. Hakim M, Khattak FA, **Muhammad S**, Ismail M, Ullah N, Atiq Orakzai M, Ulislam S, Ul-Haq Z. Access and Use Experience of Personal Protective Equipment Among Frontline Healthcare Workers in Pakistan During the COVID-19 Emergency: A Cross-Sectional Study. *Health Secur.* **2020** Nov 9. doi: 10.1089/hs.2020.0142. Epub ahead of print. PMID: 33175583
39. Inayat Shah, Saman Tauqir, Waheed Mughal, **Muhamamd Shahzad**, Tasleem Arif. Effective intensity of exercise for improving the modifiable risk factors of cvd in overweight adult males. *The Spark*. Volume 5, Issue 1, **2020**.
40. Farhad Ali Khattak, Khalid Rehman, **Muhammad Shahzad**, Numan Arif, Naeem Ullah, Zeeshan Kibria, Muhammad Arshad, Saima Afaq, Arsalan Khan Ibrahimzai, Zia ul Haq. Prevalence of Parental refusal rate and its associated factors in routine immunization by using WHO Vaccine Hesitancy tool: A Cross sectional study at district Bannu, KP, Pakistan. *International journal of infectious disease*, 2020: DOI:<https://doi.org/10.1016/j.ijid.2020.12.029>.
41. Zia Ul-Haq, **Shahzad M**, Maria Ishaq Ktk et al. Clinical Characteristic, Mortality and Associated risk factor in COVID19 patients reported in ten major hospitals of from Khyber Pakhtunkhwa, Pakistan. *Journal of Ayub Medical College*. Vol 32, No 4-Sup (**2020**).
42. Syed Abdul Qadir , **Shahzad Muhammad\*** , Maria Ishaq Khattak , Zohaib Khan , Muslim Khan , Zia Ul Haq. Selfreported oral health status and associated factors among Afghan refugees in Peshawar Pakistan; a pilot study. *Rehman Journal of Health Sciences*, Vol 2, No1, **2020**
43. Ma ZF, Ahmad J, Zhang H, Khan I, **Muhammad S**. Evaluation of phytochemical and medicinal properties of Moringa (*Moringa oleifera*) as a potential functional food. *South African Journal of Botany*. **2019**. <https://doi.org/10.1016/j.sajb.2018.12.002>.
44. Khan S, **Shahzad M\***, Khan MJ, Shahzad B. Assessment of plasma iron and zinc status and its relationship with dietary intake and body mass index in antenatal women. *RMJ*. **2019**; 44(3): 457-460.
45. Qadir SA, **Shahzad M**, Yousafzai YM. Assessment of oral health related knowledge, attitude, and self-reported practices of families residing in Peshawar, Pakistan *Adv Basic Med Sci*. **2019**;3(1): 54-58
46. Ravichanthiran K, Ma ZF, Zhang H, Cao Y, Wang CW, **Muhammad S**, Aglago EK, Zhang Y, Jin Y, Pan B. Phytochemical Profile of Brown Rice and Its Nutrigenomic Implications. *Antioxidants* **2018**, 7(6), 71; <https://doi.org/10.3390/antiox7060071>.
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50. Alalwan H, Rajendran R, Lappin DF, Combet E, **Shahzad M**, Robertson D, Nile CJ, Williams C & Ramage G (**2017**). The anti-adhesive effect of curcumin on *Candida albicans* biofilms on denture materials. *Front. Microbiol.* 8:659.
51. **Shahzad, M**, G. Ramage., C. A. Edwards And E. Combet 2013. Evaluation of the antibacterial potential of polyphenols against periodontal pathogens. *Proceedings of the Nutrition Society*, Volume 72 / Issue OCE4 / January **2013 (IF:**

52. **Shahzad, M.**, Sherry, L., Rajendran, R., Edwards, C. A., Combet, E. & Ramage, G. 2014. Inhibitory effect of plant (poly)phenolics on growth and biofilm formation by *Candida albicans*. Proceedings of the Nutrition Society, Volume 73/ Issue OCE1/2014 (Abstract)

## الكفاءات الأساسية

- Research: Grants writing, Project planning & management, Biostatistics and manuscript writing
- Laboratory: Basic microbiology techniques, DNA/RNA extraction, Next generation sequencing, Bioinformatics, dietary assessment
- Teaching: Lesson planning, Class room management, Assessment and student engagement and motivation
- Curriculum planning, development and accreditation
- Communication and public engagement
- Computer skills: Microsoft word, Excel & Power point. SPSS. GraphPad Prism.

## الجوائز والأوسمة

- Pakistan first ever Lawn Bowls athlete to represent nation in Commonwealth Games 2014 and captain Pakistan Lawn Bowls team (2014- 15).
- Recipient of Prime Minister Lap Top award for meritorious students during Masters in Health Professions Education studies (2023)
- Recipient of Higher Education Commission Pakistan scholarship for PhD studies at University of Glasgow, UK.
- Finalist British Council UK Alumni Professional Achievement Awards 2019. Recipient of HEC Pakistan Program for Collaborative Research (PPCR) travel grant to visit Medical University of Vienna (Austria) for training and submission of research project to FWF Austria (2018).
- Travel grant by KMU-ORIC to present in IADR (Iran Chapter) annual conference in Tehran, Iran (2016).
- Travel Grant Award from Biochemical Society to present poster in Nobel Conference on Biofilms, Sweden (2013)
- Recipient of Glasgow University Sports Bursary Award session 2013 – 14.

## الأنشطة العلمية

- Approved PhD supervisor by Higher Education Commission & Pakistan Medical & Dental Council.
- Member National Curriculum Review Committee (NCRC), Higher Education Commission Pakistan.
- Reviewer for national and international, peer reviewed journals
- Reviewer and focal person for evaluation of research grants under National Research Program for Universities (NRPU) & Technology Development Fund (TDF) awarded by Higher Education Commission, Pakistan.
- Master trainer National Nutrition Survey of Pakistan (NNS – 2018).
- Reviewer/examiner for evaluation of PhD/MPhil thesis of various universities of Pakistan.

## العضويات

- Member Curriculum and Assessment Committee, Zarqa University Jourdan
- Member International Association of Dental Research (IADR)
- Member American Society of Microbiology (ASM)
- Member International Society of Infectious Diseases (ISID)
- Member Association of Science Educators in Dentistry (ASEID)
- Member Executive Board of Genomic Society
- Member Graduate Studies Committee, KMU
- Member Syndicate KMU
- Member Selection Board KMU

## عروض المؤتمر (الدولية)

- Antifungal activity of selected polyphenols against fungal pathogens (Poster presentation). 2<sup>nd</sup> Fungal Biofilm Meeting. May 20 – 21, 2013. Glasgow, UK.
- Evaluation of Polyphenols as an alternative approach to antifungal therapy. Nobel Conference on biofilm formation, its clinical impact and potential treatment (Poster presentation). August 28 – 30, 2013, Karolinska Institute, Sweden.
- Inhibitory effect of plant polyphenolics on growth and biofilm formation by *Candida albicans* (Poster presentation). Nutrition Society Winter Meeting. December 9 – 10, 2014. Royal Society of Medicine, London, UK.
- Bioavailability of polyphenols in the oral cavity (Oral presentation). 12<sup>th</sup> congress of the Iranian Division International Association of Dental Research. Dec 21 – 23, 2016. Tehran, Iran.
- Potential role Nutrition in host pathogen interaction in periodontal diseases (Oral Presentation) Monthly Seminar Series of the School of Dentistry, Medical University of Vienna, April 25 2018. Vienna, Austria.
- Exploring the gut-lung axis in tuberculosis using shotgun metagenomics sequencing. (Invited Speaker). International symposium on Mycobacteriology. Mersin University, 28 – 30 November 2019, Mersin, Turkey
- Oral microbial dysbiosis in TB; Cause or Effect? World Conference on Lung Health 2022, Tokyo **(Invited Speaker)**
- Smokeless tobacco (naswar) use and oral cancer: Mechanistic insights. 4th International Public Health Conference. April 16 – 19, 2024, Khyber Medical University Peshawar, Pakistan **(Invited Speaker)**.
- Collaboration Experience and Journey of a Researcher from Low- and Middle-Income Countries (LMIC). May 18<sup>th</sup> 2024. Reachknowledge Seminar Series. Cambridge University ReachSci Society, UK. **(Invited Speaker)**.
- Oral microbiome composition and its association with nutritional status among children from remote agro-pastoral communities in Pakistan. September 6-7, 2024. International Association for Dental, Oral, and Craniofacial Research Korean Division Annual Meeting, Korea University College of Medicine, Seoul, Republic of Korea