



DEPARTMENT OF BIOLOGICAL AND BIOMEDICAL SCIENCES

Believe

Become

Succeed

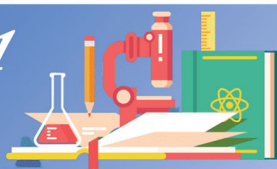
Message from the Chair

If ever there was a severe and demanding teacher, it was the year 2020. And while we are eager to turn our backs on it as recalcitrant pupils do, there is no doubt that the challenging times of the past year have been an opportunity to learn and grow. I am in awe and so deeply

appreciative of the hard work and commitment displayed by every single individual across the board. In BBS, we faced many obstacles, worked on plans A, B, C and beyond, and emerged stronger. The fact that teaching transitioned smoothly to online platforms and existing and new research was conducted, presented and published is a testament to the resilience and drive of the department's remarkable members. May this new year bring us all health, happiness, and prosperity, and may we continue to thrive and grow.

Warm regards,
Kulsoom

2021



CONFERENCE REVIEW

12th Health Sciences Research Assembly December 14 - 18, 2020

BEST THEMATIC ORAL PRESENTATIONS

- a) Spectrum of Killer-cell immunoglobulin-like Receptors Genotype in Acute Myeloid Leukemia.- **Dr Fareena Bilwani** [Theme: Cancer]
(Co-authors: Fatima Iqbal, Tariq Moatter, Naureen Allani, Mohammad Khursheed)
- b) cAMP elevating agents; a possible means to target pathological thrombosis-**Ms Tahira Ghulam** [Theme: Cardiovascular]
(Co-authors: Ghulam Haider, Muhammad Zuhair Yusuf)
- c) Pharmacological basis for the medicinal use of Amomum subulatum in hypertension-**Dr Salman Siddiqi** [Theme: Cardiovascular]
(Co-authors: Farzeen Fatma Syed, Abdullah Khalid, Javeria Farooq, Mahwish Fatima)
- d) NF- κ B-mediated IL-8 expression in neutrophil recruitment in head and neck squamous cell carcinoma -**Ms Hina Shakeel** [Theme: Cancer]
(Co-authors: Fareena Bilwani Kiran Iqbal, Kulsoom Ghias)
- e) A randomized clinical trial of chamomile and saffron tea as an adjuvant therapy for depression-**Dr Saara Mudassir** [Theme: Neuroscience]

POSTERS

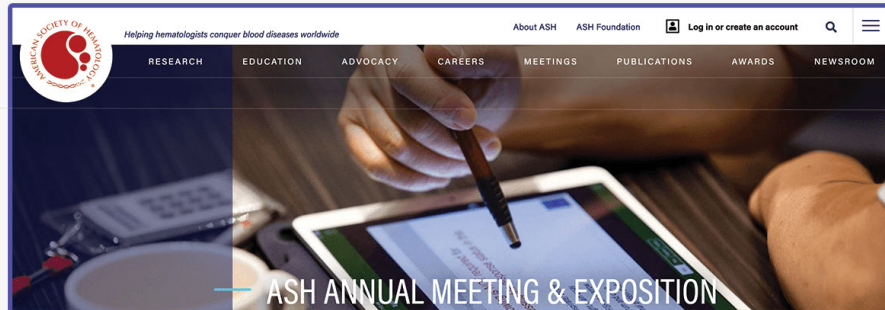
- a) Cardio-suppressant and Calcium Channel blocking activities of aqueous fraction of Alcea rosea extract- **Dr Hassan Salman Siddiqi**
(Co-authors: Sobia Tariq Siddiqui, Javeria Farooq, Mahwish Fatima)
- b) Pharmacological basis for the medicinal use of Punica Granatum in hypertension- **Dr Hassan Salman Siddiqi**
(Co-authors: Asma Merchant, Baqir Hasan Jafry, Javeria Farooq)

AWARDS

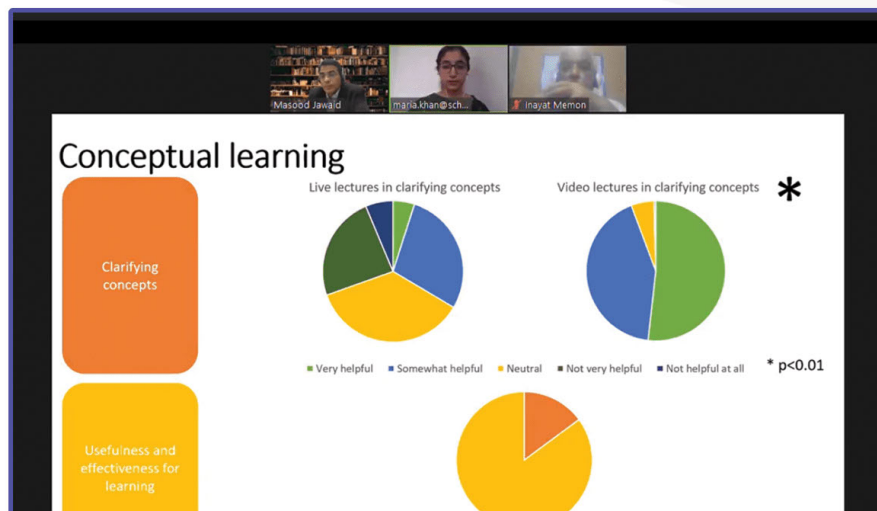
Dr Abdul Mannan Baig received the Outstanding Researcher as Junior Faculty and the Best Research Group Awards



CONFERENCE REVIEW



Deola S, Kizhakayil D, Herrera SM, Elnagger M, Lachica C-A, Gentilcore G, Saleh A, Ejaz A, Fadoo Z, Ghias K, Pusceddu I, Cavattoni I, Temanni R, Syed N, Vempalli FR, Comoli P, Mina T, Cugno C. Novel target genes and epigenetic pathways involved in high risk acute lymphoblastic leukemia. Presented at the American Society for Hematology Annual Meeting, December 2020



Ms Maria Khan (MBBS Class of 2022) gave an oral presentation on “Medical students’ perception of live lectures compared to video lectures in basic sciences medical education: a cross sectional survey of medical colleges in Pakistan” at the Virtual International Conference of Health Professions Education, University of Lahore on October 21, 2020. The study was conducted under the supervision of Dr Kanza Muzaffar. Findings suggest that medical students prefer video lectures over live lectures for conceptual learning, examination preparation and to help improve their grades.

CONFERENCE REVIEW

4th Educational Research Day
November 25-27, 2020

ORAL PRESENTATION

- a) Dr Rehana Rehman received the best oral presentation award for the study titled “An innovation in Flipped Classroom; a teaching model to facilitate synchronous and asynchronous learning during a pandemic”.
- b) Dr Sadia Fatima gave a talk on “Assessments in Medical Education: challenges & solutions during COVID Pandemic”.



STUDENT PRESENTATION

- a) Ms Maria Khan (MBBS Class of 2022) presented an e-poster titled “Medical students’ perception of live lectures compared to video lectures in basic sciences medical education: a cross sectional survey of medical colleges in Pakistan”.
- b) Mohummad Hassan Raza Raja (MBBS Class of 2022) presented and won the 2nd best oral presentation award for the study titled “The prevalence and association of stress with sleep quality: a cross sectional study at a private medical college in Karachi, Pakistan”.

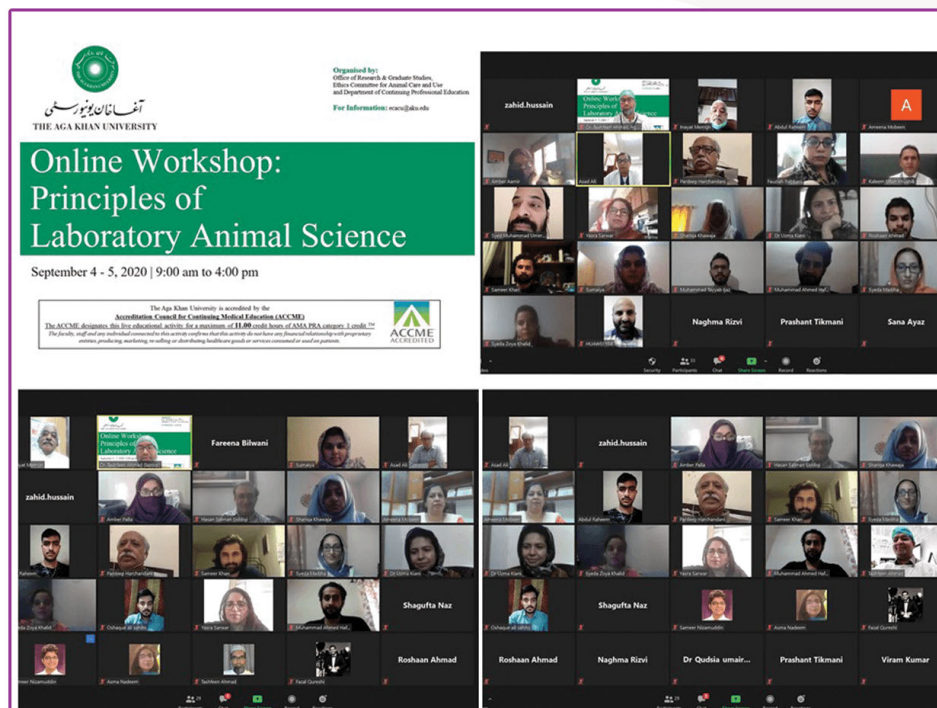
Dr Kanza Muzzaffar was the faculty supervisor for both students.



THE VIRTUAL SHIFT

Two-Day Virtual Workshop on 'Principles of Laboratory Animal Science' September 4-5, 2020

A two-Day Virtual Workshop on 'Principles of Laboratory Animal Science' was organized by Office of Research & Graduate Studies in collaboration with Ethics Committee for Animal Care & Use (ECACU) and Department of Continuing Professional Education (DCPE), Aga Khan University. This was the first time in Pakistan that an Animal Science workshop was conducted online. The workshop utilized the Anatomy and Surgical Learning Studio (ASLS) as the audiovisual "command center". Drs Tashfeen Ahmad (Directed), Fareena Bilwani (Codirected) and Hasan Salman Siddiqui (Facilitated) the workshop. The workshop was attended by biomedical researchers and animal facility staff working in various universities of Pakistan as well as international participants from the Kingdom of Saudi Arabia and the USA.



Utilizing the knowledge and skills of effective virtual teaching, the hands-on practicals were converted to moderated video demonstrations, site visit to the animal facility was converted to a virtual live tour, and group activities of ethical application development and reviews were done through breakout virtual group discussions, all intensely engaging the participants.

THE VIRTUAL SHIFT

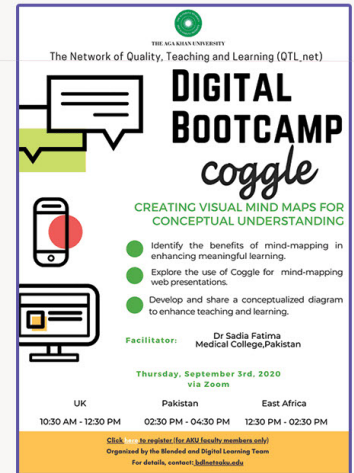
Session on 'Ethical principles and legislation in care and use of laboratory animals', 'Code of conduct in animal laboratories', 'Factors affecting animal-based research', 'Defining endpoints for invasive procedures in animals to minimize pain and distress in animals'. A moderated virtual discussion among participants on case studies in the context of 'Ethical Review Process' and video-based demonstration of 'Blood Sample Collection' and 'Drug Administration' in animals used commonly in basic science research was the highlight of the session. The workshop concluded by a 'Virtual Tour of Animal Laboratory'. Ms Sabah Farhat helped the organizers in filming the video-based sessions. The feedback from participants was very encouraging, and highlighted the limited opportunities for such training in Pakistan.



Drs Tashfeen, Fareena, Salman along with Ms Sabah and Animal House Staff giving live demonstrations to participants

FROM THE HUB

Dr Sadia Fatima

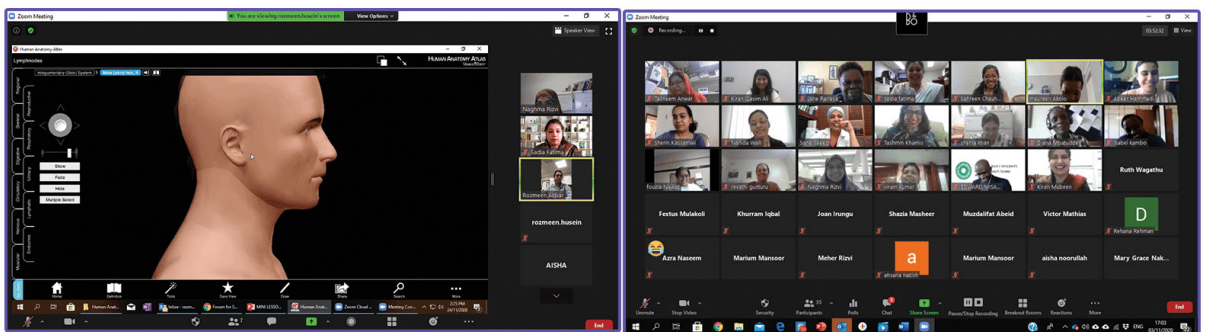


a) Attended the DOHAD ANZ digital trainee conference.

b) Attended workshop on conducting team-based learning online offered at the 4th International Conference of Health Professions education, University of Lahore.

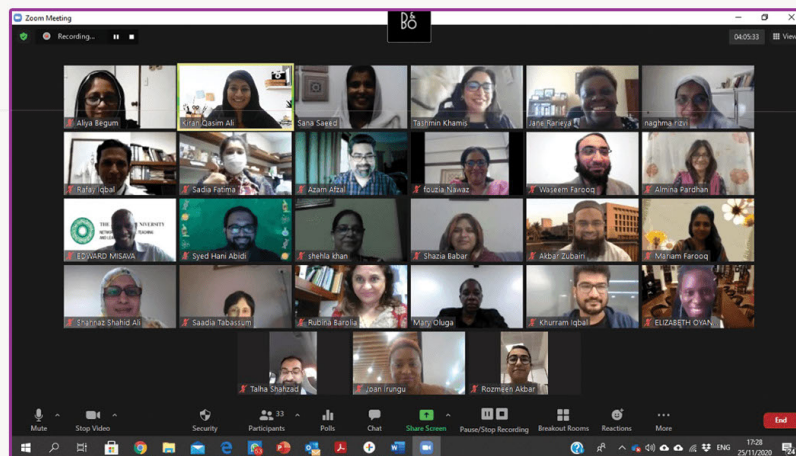
c) Attended Expertise in Teaching in Higher Education Symposium offered by UWE Bristol.

d) Conducted a Digital Boot camp on “Coogle-Creating Visual Mind-Maps for Conceptual Understanding” in collaboration with The Blended and Digital Learning Team.



e) Facilitated in University wide workshops Teaching learning Enhancement, Rethinking Teaching - A Course redesign workshop offered by the Quality Teaching Learning Network and Introductory Short Course in HPE offered by the Department of Educational Development.

FROM THE HUB



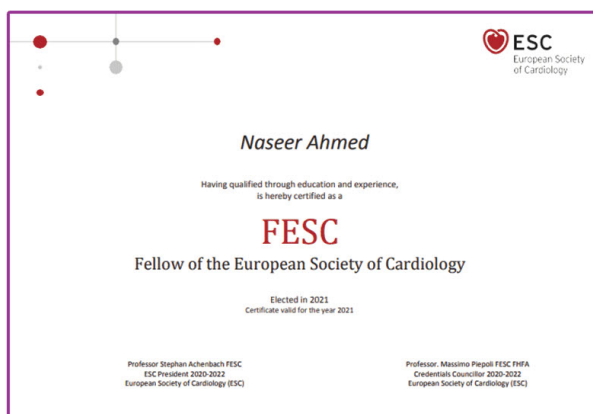
TLEW and RTT Workshops

Dr Rehana Rehman attended the Rethinking Teaching-A Course redesign workshop offered by the Quality Teaching Learning Network.

Drs Syed Hani Abidi, Kanza Muzaffar and Rozmeen Akbar Ali attended the Teaching learning enhancement workshop offered by the Quality Teaching Learning Network.

Dr Sadia Fatima was invited as Expert Panelist at Virtual Grand Rounds on 'Online education a different paradigm' by the Department for Educational Development.


FELLOWSHIP



Dr Naseer Ahmed received Fellowship of the European Society of Cardiology (FESC). He was awarded this distinction based on his contributions towards cardiology and continued commitment in reducing the burden of cardiovascular diseases.


He is also serving as an Executive Guest Editor in the Journal of Current Drug Targets for a thematic issue titled 'Translational aspect of Pharmacological Cardioprotection'.

FROM THE HUB



SAAP Bulletin
The newsletter of the South Asian Association of Physiologists
January 2021 | Volume 4, Issue 1 | ISSN: 2714-1756

Conception of a humanistic society



Professor HR Ahmad
Professor of Physiology
at SIUT and AKU

"What lies before us is the opportunity to build a more just and equitable way of life for all mankind". Al Gore

Truly, one is born twice: biologically when one enters this world and intellectually when one enters the alma mater. Thus, the enabling environment of institutions should discover and nurture faculty and students' creative intellect through research, learning, and public service. Not surprisingly, in today's world we wonder whether many countries are richly endowed because their universities are intellectually and creatively rich.

It means that universities, communities and the state of a republic are well looped and functioning. How can we introduce such a model in a country where the role of a university as a sensor of a society is not functioning? What are the challenges and

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January 2021 | Volume 4, Issue 1 | ISSN: 2714-1756

Dr HR Ahmed was invited to write a blog on 'Conception of a Humanistic Society' for the South Asian Association of Physiology (SAAP).



آغا خان یونیورسٹی
THE AGAKHAN UNIVERSITY

CME International Webinar 2020

Endometriosis and Fertility

Sunday, December 20, 2020 | 1:00 pm - 3:00 pm (GMT+5)

Activity Director: Dr. Farheen Yousof and Dr. Nadeem Zubair

Speakers and Topics

- Pathogenesis of Endometriosis
Dr. Rehana Rehman
Associate Professor,
Department of Biological & Biomedical Sciences,
Aga Khan University
- Decision Making for fertility preservation in women with Endometriosis
Dr. Nadeem Zubair
Associate Professor,
Department of Obstetrics and Gynaecology
Aga Khan University Hospital
- Fertility preserving surgery for endometriosis
Dr. Farheen Yousof
Assistant Professor,
Department of Obstetrics and Gynaecology
Aga Khan University Hospital
- Assisted Reproductive Techniques (ART) for women with Endometriosis
Dr. Kamal Ojha
Consultant
St George's Hospital, UK

- Attendance is free
- Live Streaming Link: <https://video.ahm.com/channel/aks2>
- Evaluation is mandatory to get CME credit hours

Organized by:
Department of Obstetrics and Gynaecology, AKUH
In collaboration with SOGP

The Aga Khan University is accredited by the Accreditation Council for Continuing Medical Education (ACCME)

For further information please contact: 021-34864288 Sign up: www.ahm.com | Email: sgop@akuh.edu

Dr Rehana Rehman was invited to speak at the Endometriosis and Fertility Webinar organized by the Department of Obstetrics and Gynaecology in collaboration with SOGP.

Upcoming Event

virtual

pu:se 2021

gender matters
in cardiovascular disease

Translational Research in Cardiovascular Medicine

1600 - 1900 hrs | January 23, 2021

Session Introduction:
Dr. Kulsoom Ghias, Chair, BDS department
Aga Khan University, Karachi
BDS Cardiovascular Research Introduction
Dr. Muhammad Zuhair Yousaf
Dr. Hasan Salman Siddiqi
Dr. Sadiya Fatima
Dr. Saheer Hashmi
Dr. Naveer Ahmed
Guest Speakers:
Dr. Azam Jan
Head of Department, Cardiothoracic & Vascular Surgeon, Rahman Medical Institute, Peshawar
Prof. Muhammad Akram
Pro-VC, National University of Medical Sciences
Faisalabad

Panel Discussion:
Prof. Anwar-ul-Hasan Gilani, SL, HE
Vice Chancellor, University of Faisalabad
Maj. General (R) Prof. Muhammad Aslam
Pro-Vice Chancellor NIMS
Prof. Asmat Saleem, Karachi University
BDS Faculty


Closing Remarks:
Prof. Syed Iftikhar Razaq, Secretary General,
Pakistan Cardiac Society

Co-Moderators:
Session Chair: Dr. Naveer Ahmed
Session Moderator: Dr. Sadiya Fatima
Session Team/Facilitators: Dr. Salman Siddiqi,
Dr. Saheer Hashmi, Dr. Muhammad Zuhair Yousaf

Objectives of the Session: The ultimate goal of biomedical research is to improve healthcare by discovering new effective strategies and translation of basic research is the key to achieve it. Selection of appropriate research question utilizes resources and time efficiently. The objective of this session is to explore how to translate our current research to address the challenge of exponentially growing cardiovascular burden.

Target Audience:
Scientists, Students, Residents, Physicians,
Cardiologists, Cardiac Surgeons

For questions
www.ahm.edu/pu:se
021-34864288 | 021-34864288

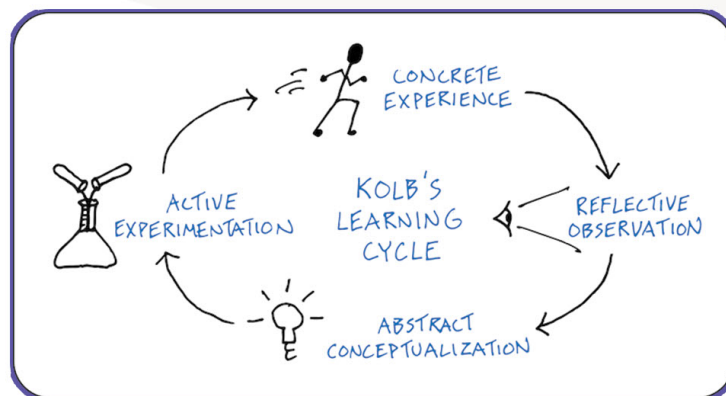


PERSPECTIVES

Modifying Flipped Classrooms

By Drs Rehana Rehman and Syeda Sadia Fatima

Flipped classroom' pedagogy has been used by many educators to promote active learning, improve outcomes, enhance student engagement and manage time and resources. Student engagement increases accountability for learning and provides more time for hands-on activities. Recent research has suggested flipped classroom to be an ideal model for pre-clinical medical education (Street, Gilliland, McNeil, & Royal, 2015). We have adopted this strategy in "Flipping physiology laboratory sessions in undergraduate medical education: Improve student engagement, learning and performance".



In this model, students were presented with brief videos ahead of scheduled practical sessions, available online for unlimited time. The pre-class activities (quiz and others) were authentic, 'humanizing' and presenting 'real life' scenarios that are relevant to the student's degree. The face-to-face session was facilitated by subject experts, to guide students on application of knowledge in a dynamic and interactive way based on the content, personal experiences or research-based evidence as per the Kolb's cycle of Concrete Experience (CE; they will observe the videos of instructors performing the procedure), they were asked to attempt pre-lab quiz with both MCQs and open-ended questions (Reflective Observation; RO) and were able to propose mechanism for the procedure (Abstract Conceptualization; AC). In the class they were dispersed in groups where they collaborated (Social Constructivism) to perform the procedure (active experimentation; AE) with RO. In the post laboratory session they used AC and RO to answer the questions and complete the feedback form.

STAFF IN FOCUS

What do you do at BBS?

I joined BBS in 1997, worked in many capacities, started as Clerk Typist, gave administrative support to many Departmental heads and Vice- chairs and also worked on graduate programs. Currently working as Coordinator Grant Administration.

Your experience at BBS?

My experience was awesome and a path of learning. The friendly environment made me stay long at BBS.

Did working at BBS help you professionally and personally?

Yes it did, personally I feel more confident and at a professional level learnt a lot from my seniors which played a major part in my professional growth. Many opportunities were provided by the department which helped me in developing professional skills.

Any advice for newbies at BBS?

Stay focused and work with honesty. Be helpful but stay away from interfering in others issues.

One word for BBS?

Group of Champions!



Mr Ali Moosa

From whom you learned most at BBS?

I learned from everyone but I would like to mention Gulafroze Jessa who helped and supported me in every step of my journey at BBS.

Your hobbies?

Reading and gardening.

How do you maintain work life balance?

I try to maintain it with time management

Your favorite personality and why?

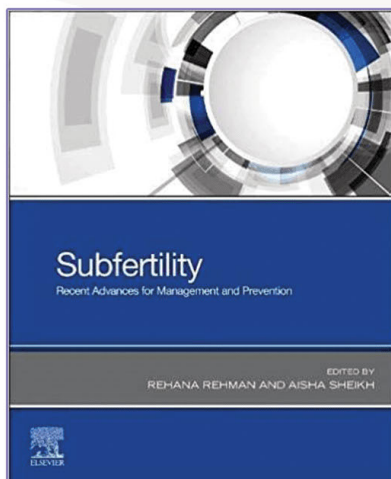
Imran Khan as he is a good leader and he knows how to handle critical situations.

PUBLICATIONS

Non-Communicable
Diseases (8)
COVID-19 (3)
Medical
Education (6)

17

Books and Book Chapters



1. “Subfertility: Recent advances for management and Prevention” By Dr sRehana Rehman (BBS) and Aisha Sheikh (Medicine). This book focuses on the detection of causes, psychological impact, and guidelines for the treatment of subfertility, and management of special endocrine abnormalities such as polycystic ovarian disease, endometriosis and thyroid disorders.



2. “Research till Publication in Healthcare” By Drs Rehana Rehman, Professor Emeritus Perwaiz Iqbal, Satwat Hashmi, Najeeha Iqbal, Fazal Arain and Saara Muddasir. This book provides readers an overview of the journey from planning to conducting research—a critical skill for trainees, students, and early career researchers.

PUBLICATIONS

3. Rehman R, Zafar A, Fatima SS, Mohib A, Sheikh A. Altered sperm parameters and subclinical hypothyroidism; A cross sectional study in Karachi, Pakistan. *Int J Clin Pract.* 2020;74(9):e13555. doi: 10.1111/ijcp.13555.
4. Shahnawaz W, Suhail N, Siddiqui MAI, Yasmeen S, Fatima SS. Does Lipocalin-2 Affect Metabolic Syndrome in Hepatic Infections? *Cureus.* 2020;12(8):e10040. doi: 10.7759/cureus.10040. PMID: 32983730;
5. Bilal B, Saleem F, Fatima SS. Alcohol consumption and obesity: The hidden scare with COVID-19 severity. *Med Hypotheses.* 2020;144:110272. doi: 10.1016/j.mehy.2020.110272.
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7. Cianciolo AT, Mitzelfelt J, Ghareeb A, Zahid MF, Akbar R and Ghias K. Physician-Scientist or Basic Scientist? Exploring the Nature of Clinicians' Research Engagement. *Adv Health Sci Educ Theory Pract* 2020. doi: 10.1007/s10459-020-09988-5.
8. Farina Hanif , Qurat-Ul-Ain Amir, Washdev Washdev, Fareena Bilwani , Shabana Usman Simjee , Zeba Haque . A Novel Variant in Dopamine Receptor Type 2 Gene is Associated with Schizophrenia. *Arch Med Res.* 2020; S0188-4409(20)30623-8.
9. Tariq H, Zahid N, Amir D, Ashraf F, Aftab MA, Yousaf S, Rehman R. Estimation of folic acid/micronutrients levels; Does it reflect sperm parameters. *Int J Clin Pract.* 2020;00: e13790. doi:0.1111/ijcp.13790.
10. Rehman R, Fatima SS. An innovation in Flipped Classroom: A teaching model to facilitate synchronous and asynchronous learning during a pandemic. *Pak J Med Sci.* 2021;37(1) doi:<https://doi.org/10.12669/pjms.37.1.3096>
11. Siddiqi HS, Rehman R, Fatma F, Martins RS, Ibrahim MT, Alam F. Peer-Assisted Learning (PAL): an innovation aimed at engaged learning for undergraduate medical students. *J Pak Med Assoc* 2020;70(11):1996 – 2000 doi:10.5455/JPMA.29714. I.F. 0.696

PUBLICATIONS

12. Rehman R, Zafar A, Ali AA, Baig M, Alam F . Impact of serum and follicular fluid Kisspeptin and estradiol on oocyte maturity and endometrial thickness among unexplained infertile females during ICSI
PLOS ONE 2020;15(10): e0239142
doi:10.1371/journal.pone.0239142: IF: 2.870
13. Alam F, Siddiqi HS, Ladak AA, Sami A, Merchant AAH, Rehman R. Peer Assisted Learning (PAL): Views and Perspectives
Pakistan Journal of Physiology, 2020, 16(2)
14. Noreen K, Umar M, Sabir SA, Rehman R. Outbreak of Coronavirus Disease 2019 (COVID-19) in Pakistan: Psychological impact and coping strategies of Health Care Professionals. Pak J Med Sci. 2020;36(7)
doi:10.12669/pjms.36.7.2988
15. Rehman R, Rajpar HI, Ashraf M, Iqbal NT, Lalani S, Alam F. Role of oxidative stress and altered thyroid hormones in unexplained infertility Pak Med Assoc 2020; 70(8):1345-9
doi: 10.5455/JPMA.21140 I.F.696
16. Ashraf M, Mustansir F, Baqir SM, Alam F, Rehman R. Changes in vitamin E levels as a marker of female infertility. J Pak Med Assoc 2020; 70(10): 1762-66 doi:.5455/JPMA.40329 I.F..696
17. Yusuf MZ and Ahmed N. Are we geared for the upcoming challenges by nCoV-19 or is it still grim news? PBMJ 2020;3:1 Editorial

For Feedback and Submission contact
Bilal Effendi bilal.effendi@aku.edu

Editorial Team: Drs Sadia Fatima, Rozmeen Akbar, Junaid Iqbal,
Ms Javeria Farooq, Ms Omaira Anis Bhatti and Mr Bilal Effendi