



SAAP Bulletin

The newsletter of the South Asian Association of Physiologists

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2023 is HERE bringing NEW CHANGES and HOPE.

THE South Asian Association of Physiologists has a
NEW council and THE SAAP Bulletin has a NEW
EDITORIAL TEAM.

DESPITE worldwide RECESSION following THE COVID
pandemic 2023 brings HOPE!

Long live SAAP!

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Message from the President SAAP



It is with great pleasure that I write this message as the President of the South Asian Association of Physiologists (SAAP) elected for the years 2023 and 2024. I am very thankful to all the members of the Executive Council of SAAP for electing me for this prestigious position. I sincerely remember with deep gratitude the Founding Father of SAAP, the late Professor Arif Siddiqui.

South Asians from Afghanistan, Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan, and Sri Lanka have rich and diverse ethnic, cultural, and religious backgrounds. While promoting peace and harmony among all in the South Asia Region, it is our responsibility to strengthen the foundation built by SAAP founders stronger for the betterment of the younger generation. We together need to work towards enhancing scientific interactions through research and physiology education for better visibility of South Asians.

During this 2-year period, we will together initiate sub-committee discussions on research and physiology education to identify current trends in research and education to identify our strengths, and weaknesses, and how to move forward. For this purpose, we have a very competent team of physiologists appointed as 'Adjunct advisors' from whom we will seek advice. In addition, we need to contribute as a team and represent at different global forums such as the International Union of Physiological Sciences, the Federation of Asian Oceanian Physiological Societies, and other international bodies.

In addition, identifying and recognizing the junior and senior physiologists who work hard and contribute to uplifting physiology-related research, education, and service are meant to encourage fellow physiologists. We have developed a set of criteria for two memorial awards to be made in the name of Professor Arif Siddiqui to recognize the most suitable young and senior physiologist. During this two-year period, we will work towards identifying a budding physiologist and a senior physiologist and recognizing their contributions, and appreciating the donation made by the family of our founder towards the same.

Publishing research findings and educational reforms is another method of enhancing the visibility of SAAP members. Being a professional society established in the year 2008, it is high time for SAAP to establish its own identity for the benefit of its members. Another task in our hands during our tenure is to establish a good journal to share research work.

Another accomplishment to consider is the establishment of physiological societies in Afghanistan, Bhutan, and Maldives to expand our membership and thereby represent our regional forum at the global level.

I am confident that with the support of the Secretary-General, advisors of SAAP, Executive Council members, adjunct advisors, research and education sub-committee members, and all other members of the member societies of the South Asian Association of Physiologists will move forward and work for the betterment of fellow physiologists.

Long live SAAP!

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Message from the Secretary General SAAP



I am grateful to Executive Committee of Pakistan Physiological Society, especially Prof. Umar Ali Khan (President PPS) and Prof. Muhammad Aslam (Founder member of PPS and SAAP Advisor) for my nomination as the SG SAAP followed by endorsement by all the SAAP Advisors. The vision of my mentor and father of SAAP Prof. Arif Siddiqui (RIP) invested in me keeps me running on my toes.

I pledge to bridge the gap between SAAP member societies through active academic and research collaboration and to promote friendship beyond borders. I am glad to announce that the Physiology education subcommittee of SAAP has already announced its first collaborative hybrid session and Research subcommittee is in the process of activation.

It is my wish to take SAAP to next level by working towards establishment of Physiological societies in Bhutan, Afghanistan and Maldives. I have inherited this dream from the father of SAAP and obtained the kind approval of the Health Minister of Afghanistan on it during his recent visit to University College of Medicine and Dentistry (UCMD), The University of Lahore (UOL), Pakistan.

After 3 years of dedication and publication of 12 issues of SAAP Bulletin, Prof. Piyusha Atapattu is going to delegate to the newly nominated editorial board after the current issue of February 2023. It is a matter of pleasure that the new SAAP Editorial board has been nominated which will take charge from now onwards with kind support of Prof Piyusha as the Advisor.

So far 8 biennial SAAP conferences have been held, out of which the 6th one was conducted by me as the organizing secretary and my dynamic Physiology department of UCMD, UOL, Pakistan with support from Prof. Arif Siddiqui and Prof. M. Aslam as the Chair and Co-chair respectively. I have been participating in the activities of SAAP since the 1st SAAP conference held at Islamabad, Pakistan in 2008 with a closer association as VP SAAP from Pakistan in 2021-22.

We aim at getting SAAP registered with SAARC to bring peace and academic prosperity in South-Asian region. Due to active involvement in IUPS, FAOPS and APS, along with close collaboration with our international adjunct advisors, we aim at global standardization of Physiology teaching and learning as well as research. I believe in the leadership and companionship of my mentor and friend Prof. Mangala Gunatilake. Along with the support of the dynamic executives of member societies (BPS, PSN, PSSL, PSI and PPS), and most importantly by the grace of Allah Almighty, all these goals will materialize within these two years (2023-2024).



Prof Dr Samina Malik
Secretary General
South Asian Association of Physiologists

Attitude and Behavior of “Problem Students”: Hostile & Hecklers inclined to shatter their own dreams



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1. STATE OF AFFAIRS:

The Issue of professional behavior of medical students is currently a ‘hot topic in medical education. Trouble maker students of any Private or Government based academic institutions falls under the category of “problem students”.² These students act in-differently during classes, labs, wards, patients handling and prove to be very hostile and aggressive.

Although, a number of important factors that renders a student towards hostility or heckling are associated with their earlier life, family & psychology, but it is not the aim of this article. Instead its objective is to highlight attitude and behavior of such students and the teacher’s advice/counselling needed for them.

In this perspective, it is important to note that these “Problem Students” are unaware with the benefits to attend classes (Theory/Tutorial/Lab), regularly or to prepare assignments / lab reports / practical journals seriously or to attend clinical ward rotations with fervor. These activities are actually the bases of earning knowledge and skills for their future profession. Students who are in their tender age ignore the fact that **the Teachers (Basic or clinical Sciences) are life time learners who manage to deliver the updated knowledge,**

cognitive skills, experienced learning and of course the mentor level attitude and behavior to their students.

*The “Problem Students” who are hostile-aggressive are encountered by every teacher. The Teacher knows that the choice of students being positive or negative is very powerful in determining his/her successes or failure in an academic institution. When a “problem student” act negatively he/ she is inclined to shatter his/her own dreams to become a competent health professional. Consequently, one can predict that such students may get **a medical degree but will be unable to achieve competency in professional health care with high reputation.***

It is a fact that, Teachers are after students for building their personality as a successful & competent health care professional.

2. STUDENT’S ATTIRE:

One of the important ethical issues is the unwanted attire in which these “Problem Students” attend an academic institution. The presence of students in a college or University is a kind of social gathering for the purpose of obtaining education and successful future. According to norms of the educational environment of academic institutions, this attire must follow the principles of institutional requirements to reflect National and Religious colors in it. Many of the student’s attire are based on their own choice deviating from norms of Institutional, National or Religious requirements. Students should know that when we are in a social setup of an educational institution, we should sacrifice our choice and up held the principles of institutional requirements to dress up in dignified way. **Yes! The age of a Medical student is a**

fascinating age and like to have fashion & passion both, students are free to adopt it at home, at cultural meetings, celebrations, etc. but not in routine in an educational institution. A student should attend Medical School in simple and dignified attire, wear a lab coat, and fulfil the purpose for what students comes in the educational institutions. The **lab coat is an insignia and identity of health professionals, wear it, as the future of the students of medicine is wrapped in it. Although, the students who opt for medicine are mature enough**, but still unable to decide what is “right” and what is “wrong”. While, “**wrong is always wrong, if everyone is doing it”**. And right is always right even none is doing it. Teachers need to shape student’s personality with “rights” by trimming out all “wrongs”.

3. STUDENT’S ATTITUDE IN CLASS/HOSPITAL WARDS:

The student’s attitude that exhibits interruption in class teaching is known as heckling. It may be active or passive. The Active heckling: is the worst one, when a student interrupts and starts talking directly to the Teacher in the middle of lecture or patient presentation, either not relevant or if relevant just a waste of time. Passive heckling: is a more mild form of disrespect. This kind of heckling usually takes the form of someone having own conversation with their neighbor in the class or playing with their smartphone. Although less abrasive, but it can throw a teacher and other students off. Such acts are especially annoying when consultants address the students in ward on patient’s bed.

The classes are arranged for students to build their future. **The teacher should convince the students politely & tactfully to not lose the link with Teacher, who is delivering lecture, remind them to become active learner. Advice to listen, visualize and think what is being explained and shown on screen or how a patient is being presented to**

them for clinical examination and diagnosis, to understand the concept well. But, “Problem Students” instead of composing themselves to follow ethics and concentrate to collect KNOWLEDGE & COGNITIVE SKILLS during class/wards, they:

- a. Lose mental concentration and whisper with fellow sitting beside.
- b. Play with mobile or text at home or elsewhere.
- c. Read another book to prepare for another subjects test in the coming next class.
- d. Smile on fellow student’s gossips.
- e. Just putting head down, yawing or even sleeping.
- f. Just looking indifferent, i.e., physically present mentally absent.
- g. Ask silly question to either patients or consultants for fun during wards.

On the basis of all of the above irresponsible and un-ethical acts, in which the “Problem Students” are, indulged during lecture and training, it is clear that they don’t realize the distraction of class Teacher or consultant who is now unable to concentrate for which he intended to deliver the knowledge and skills to their students. Even, under such circumstances the teacher after **ignoring such students many times ultimately dragged to threshold of anger and pass snapping comments. Consequently, the teachers turn such student out from class/ward. Some of them say Sorry! But do the same or even worst act later.**

In the above scenario, these students need counselling that teacher, consultant or paramedic is also a human, he/she may have one or the other reason to be aggressive or pleasant or not perfect for the time being in delivering the goods, as per his/her physical and mental status reached in disturbed class or ward environment. In such situation the students should bear it with respect,

as teacher is working for the students and students are not working for them.

In addition, some of the “Problem Students” say bad things about their own institution, its administration and its Teachers. Actually this act is massively crazy, as it undermines the credibility of the education that they have paid for. It might be possible that a student may not grasp the teacher’s explanation for a particular point in a class, so **Teacher should advise them that, instead of making a noisy & fussy foreground for the teacher, they should raise hand, ask appropriate question which is to be clearly and satisfactorily answered by the Teacher.** Sometimes it also happens that the teacher is answering a question asked by a student which is already clear to other student(s). Such students should remain silent till the teacher finishes explanation. In this situation, the “Problem Students” take advantage to distract not only the teacher but the whole class.

4. TEACHER SHOULD EXPLAIN ACTUAL MEANING OF EXAMINATION GRADING:

The “problem students” always make adverse comments on examination grades and on teacher who assessed them. In fact a Teacher never, ever, grades A, B, C or D to the student’s self-abilities, character, mind, or intelligence. They grade student’s work performance in exam. *It just happened to student to earn one of those grades on an assignment, tutorial activity or class test.* The final grade in the class is the cumulative average of student’s performance on a group of such individual assessments. *Therefore, teacher never gives grade, the student him/her-self earn grades.* Teacher should advise students to understand the correct concept of examination and grading and allows them to see their graded test papers freely, and answer their questions. Although, <5% students turns up to see the comments of the teacher on his/her performance or discuss the grades he/she got in it.

5. TEACHER SHOULD INDUCT THE VALUE OF READING & WRITING COMPREHENSIONS:

A) READING:

“Problem Students” are very in-different to reading habits while the question of writing doesn’t arise. They neither carry any book/pen nor do they intend to read anything that is related with their courses of studies. While, education is exactly equivalent to the amount of reading that a student has finished for understanding and comprehended knowledge and skills. Every time a student read, especially difficult material, the student is working out mind to understand the **message given by the author. Reading is the single best favor that a student can do for himself.**

When students read their most favorite or attractive books/magazines/internet/social media, etc., they enjoy, appreciate and remember each and every word/scene/story. **Teacher should advice students to make up their mind to attain excellence in studies and accept reading the text books, curriculum related material, internet related browsing, subject related reference books, magazines,** then they cannot be the looser in terms of future for becoming a highly reputed health professional.

B) WRITING:

Writing comprehension also matters for common as well as “problem students”. The students should be advised to improve their vocabulary of words. It will train their mind. Writing is itself a good investment, may be even more important than only listening or reading the specific contents of many of their classes. Teachers must advice the students **to write their thoughts in their own words after reading a topic thoroughly. It will help to exploit their brain’s COGNITIVE ability to integrate; read, think, question and thus understanding effectively and correctly.** Once a student learn to brain storm in this way he/she will find easy to convert the

audio-visual input (received in classes) in to a well-organized script (write-up) to impress the teacher/examiner and thus to **earn grade and not to beg grade. Such students are active learners. In fact, the** short essay questions given to students actually help them to improve their writing skills.

CONCLUSION:

The “Problem Students” either hostile or heckler, their earlier background has the clues to resolve their personalities. However, the negative activities highlighted in this article are observed commonly in the medical or any academic institution. Such students need help through Teachers, either in class or separate counselling. **During counseling their negative traits related to either attitude, behavior or attire should be addressed. Additionally, their fears or misconception about examination grading and ignored reading habit and avoidance from writing should be taken up for improvement.** In this connection, it is important that after knowing the unprofessional behavior in an institution, it should be followed by structured remedies to be employed for “disturbed students”. However, it is possible that some of them need a thorough analysis of their personalities in the presence of a psychologist and meeting with their parents/guardians to address their problems for the rectification of traits that compel them for unwanted acts in the academic institution.

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Lessons Learnt from a Pilot Study of a Mindfulness-Based Intervention for Pregnant Women in a Rural Area in Sri Lanka



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Introduction

Pregnancy and parturition are two of the most significant, exciting and stressful events many women face during their lifetimes. Every day, an average of 800 pregnant women around the globe die due to preventable causes (1). Nearly 99% of all maternal deaths occur in developing countries (1).

Maternal suicide has emerged as a leading cause of maternal death over the past few decades (2). It has become a leading cause of maternal death in some countries (3–5). Suicide is only the tip of the iceberg. A recent systematic review shows that the suicidal ideation is largely underreported and the available tools do not capture the actual risk (6). Pregnancy and childbirth represent a time of increased vulnerability, during which a woman is exposed to many physiological and psychosocial changes, which puts pregnant and postpartum women at increased risk of mental health problems. It has been consistently shown that the prevalence of maternal mental health issues are much greater in low income countries and lower middle income countries (16% and 20%, respectively) (7) than in high income countries (8).

Antenatal depression, maternal anxiety and lack of psychosocial support during pregnancy is associated with low birth weight (LBW)/preterm birth (PTB), reduced gestational age at birth or intra uterine growth retardation (IUGR) (9–11).

Maternal mortality indicators in Sri Lanka are on par with developed countries (12). However, in the North Central province of Sri Lanka, reanalysis of maternal deaths using ICD MM (13), the ICD version recommended for causes of maternal deaths classification showed that suicide is the leading cause of maternal death in this area (14). Further, previous research in this area showed that 16.2% (15) of pregnant women have depression and anxiety, and in Sri Lanka, 27.1% of postpartum women have depression (16). In this given context, maternal mental health promotion should be considered as a high priority in Sri Lankan public health settings.

Mindfulness is an emerging concept in mental health promotion. It was the original healing method used for centuries in ancient cultures in Asia. Clinical use of mindfulness was widely discussed in late 20th century (17,18). In nutshell, mindfulness is the non-judgmental, non-reactive, on purpose awareness on the present moment with a quality of acceptance. The concept of mindfulness first originated in South Asia with Buddhist philosophical roots (19)(20), but is now embraced by many Western countries as an important means of improving psychological and physical health in people (21,22). In recent years, the science, practice and implementation of mindfulness-based interventions have dramatically increased (23).

Several recent studies have shown that mindfulness-based interventions for pregnant women have been effective in increasing positive affect, decreasing negative affect (24,25), decreasing anxiety (24–26), decreasing depression (25,26), and decreasing stress

(26) during pregnancy. These benefits were seen to extend into the postpartum period in some cases (24,26). A study conducted in 2019 concluded that there were significant reductions in stress and depression 3-months postpartum, but there were no significant differences in mindfulness scores (27). Nevertheless, two recent systematic reviews (28,29) show mixed results on mindfulness-based interventions in pregnancy. One of these reviews showed that anxiety, depression and perceived stress indicated no differences between the mindfulness intervention group and the control group in pooled results of RCTs. However, pooled results of non-RCTs showed a significant benefit for the mindfulness group. Other review also showed similar results with probable effect on maternal anxiety. Both reviews suggested that more work is needed on this area of research to produce evidence-based guidelines. None of these studies have used a community-based approach on cultivating mindfulness in cluster basis. All were aimed at training a group of people. Integrating the mindfulness-based activities to routine program to improve maternal and newborn health outcomes are scarce.

Conducting mindfulness-based interventions (MBIs) as community-based programs is challenging. In the current study we assessed the strengths and weaknesses of a community-based pilot MBI conducted for pregnant women in the rural Anuradhapura district of Sri Lanka.

Methods

The pilot MBI was conducted in three settings in Anuradhapura as weekly 2-hour sessions over 6 weeks, for second trimester pregnant women (Figure 1). Two settings in Nuwaragam palatha central and one setting in Mihintale were included in the study. As the attendance was poor in the first three programs, to maintain the uniformity of attendance, a 4th group of pregnant women were recruited for the study from Kurundankulama PHM area. However, this 4th program had to be discontinued after 4 weeks due to the

emergence of COVID-19 epidemic. The evaluation was performed based on diary memos and call logs maintained by investigators, attendance sheets, participant diaries and the feedback taken from the participants. Quantitative and qualitative data were analysed using descriptive statistics and thematic analysis respectively. Data from those who completed 5 or more weeks were included in the analysis.

Results, discussion and conclusions

Prior to the introduction of the incentive, only 22 % of the participants attended 5 or more programs, and following the **introduction** of the incentive of Rs 500/- a day, 77% attended all 4 sessions conducted (and discontinued due to the emergence of the COVID-19 epidemic). Low priority given to attend the program amongst other commitments was a main reason for poor participation. Unfamiliarity of the investigators impeded initial voluntary recruitment. During the programs it was observed that the participants managed to engage in mindfulness practice at home in daily activities.

The eight participants who completed the program were with overwhelmingly appreciative comments regarding the mindfulness training they received. "Thank you for revealing to me a wonderful direction in life that I had never known before", "please introduce this program to the routine antenatal clinics", "now I can face challenging situations in life with a calm mind, remaining in the present moment" and "this program changed my life" were among their feedback received at the conclusion of the program.

Conducting a community-based MBI needs a well-planned approach by a healthcare provider familiar to the participants. It was also observed that an incentive maybe helpful in maintaining attendance. It can be concluded that introducing a MBI to Sri Lanka's routine antenatal program is beneficial.

Disclosure

The contents discussed in this article have previously been presented as an e-poster presentation in APACPH 2020 conference.

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Figure 1: MBIs being conducted in two settings

COVID-19 and vascular health: should we be concerned about long-term cardiovascular risk?



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COVID-19: is it a respiratory disease or vascular disease?

As of January 2023, coronavirus disease 2019 (COVID-19), the disease caused by severe acute respiratory syndrome coronavirus-2 (SARS-CoV-2), is still being considered to be a public health emergency of international concern by the World Health Organization (WHO) ¹. To date, over 750 million COVID-19 cases have been reported globally ², while many more cases have likely been undetected and/or unreported. Moreover, it is predicted that COVID-19 will remain an endemic disease for the foreseeable future ³. Although COVID-19 was initially classified as a respiratory illness, it has become evident that it is more of a multi-system disease. Indeed, the multi-organ involvement and high incidence of cardiovascular complications such as myocardial infarction, stroke, vasculitis, and thromboembolism ⁴⁻⁹ during the acute illness generated the discussion of whether COVID-19 is in fact a vascular disease rather than a primary respiratory disease ¹⁰.

The involvement of the angiotensin converting enzyme-2 (ACE2) receptor in the pathogenesis highlights the potential mechanism by which COVID-19 could be considered a vascular disease. ACE2 receptor is a vital component of the pathways of the renin-

angiotensin system that contribute to maintaining vascular health ¹¹. ACE2 receptors are found in abundance on the respiratory epithelium as well as in many other tissues including the vascular endothelial cells ¹². Binding of SARS-CoV-2 to the membrane bound ACE2 receptors is the first step in the pathogenesis of COVID-19 ¹³. On one hand, binding of the virus to the receptor allows the virus to enter the cells and generate a local inflammatory response. Thus, direct infiltration of the virus in vascular endothelial cells and the ensuing local inflammation is one mechanism that could alter vascular health in COVID-19. On the other hand, binding of SARS-CoV-2 to ACE2 has been shown to cause downregulation of the receptor and/or release the receptor into the circulation ^{14,15}. Thus, reduced ACE2 activity could be a second mechanism that disrupts vascular homeostasis in acute COVID-19. In addition, the viral infection induced general inflammatory response could also indirectly affect vascular homeostasis.

Adverse cardiovascular outcomes in acute COVID-19: the potential role of altered vascular health

One of the most important functions of the vascular endothelium is to release, as well as respond to vasoactive molecules, and thereby regulate vascular tone to meet the requirements of the specific organ and the body as a whole. This is achieved by maintaining a tight balance between vasoconstrictor and vasodilator function of the vascular wall. However, a pathological insult on the vasculature would lead to a shift in the balance towards heightened vasoconstriction and/or impaired vasodilator function. This is referred to as vascular dysfunction. Importantly, emerging evidence suggests that vascular dysfunction could be the first step in the pathological processes involved in the development of cardiovascular diseases ¹⁶. Thus, given this association between cardiovascular disease and

vascular dysfunction, the observation of cardiovascular complications in COVID-19 prompted many researchers to directly explore the impact of COVID-19 on vascular function. A frequently used measure of vascular dysfunction is flow-mediated dilation (FMD) of the brachial artery, a measure that has been shown to correlate with coronary artery vasodilation¹⁷. Several studies in both young and older individuals have clearly demonstrated that brachial artery FMD is reduced in those who are within the acute phase of COVID-19 (i.e., within 4 weeks of diagnosis or symptom onset) compared to those with no history of COVID-19, indicating that vascular function is in fact impaired in acute COVID-19. Notably, these findings have been observed in those with severe COVID-19 as well as those with only mild symptoms and no pre-existing diseases^{18–21}. Thus, it could be postulated from these findings that acute COVID-19 is associated with vascular dysfunction. This may potentially contribute to the development of cardiovascular complications.

In addition to vascular dysfunction another factor that is known to be associated with an elevated cardiovascular disease risk and the development of hypertension is elevated central arterial stiffness²². Changes in arterial stiffness could result from both functional and structural changes of the vascular wall. Notably, central arterial stiffness has been consistently shown to be elevated in individuals who are within the acute phase of COVID-19^{18,19,23–25}. However, the mechanisms by which SARS-CoV-2 infection could alter arterial stiffness or whether acute changes in arterial stiffness leads to acute cardiovascular complications is unclear.

Impact of COVID-19 on long-term cardiovascular health

Recent data has demonstrated that individuals who had COVID-19 and are beyond the acute phase are at a higher risk of developing adverse cardiovascular outcomes compared to those without a history of COVID-19^{26,27}. These findings are from a study that followed up participants for up to 1 year post COVID

diagnosis and the elevated risk was apparent even in those who had only mild acute COVID-19-related symptoms and in those with no pre-existing cardiovascular disease²⁶. Given that vascular dysfunction may contribute to the development of cardiovascular disease, a question that arises is whether COVID-19 induced vascular dysfunction persists beyond the acute illness and could this lead to a greater risk of cardiovascular disease in these individuals. Notably, findings from studies on vascular function beyond the acute phase of COVID-19 are less consistent, with some data indicating persistent impairment in vascular function^{28–31} while others suggest no impairment^{32,33}. Possible reasons for the discrepancy in findings between studies could be due to the differences in age, severity of acute SARS-CoV-2 infection, and time from COVID-19 diagnosis of the participants at the time they were studied. However, preliminary evidence suggests that vascular dysfunction as well as changes to arterial stiffness that was observed during the acute phase of COVID-19 may be transient and gradually improve over time^{34–36}. Whether the improvement is 100% or whether residual effects are present is however unknown due to the absence of pre COVID-19 data in these individuals. Nevertheless, this suggests the possibility that elevated cardiovascular disease risk following COVID-19 may also be transient. However, long-term follow up studies are necessary to determine whether the risk is still elevated beyond one year from COVID-19 diagnosis. Unfortunately, this may pose as a difficult question to answer given that testing for SARS-CoV-2 infection is now minimal in many countries. In addition, the emergence of different SARS-CoV-2 variants with varying disease severity and preventive vaccinations would make the interpretations of follow-up studies quite complex.

Impact of Long COVID on cardiovascular health

It has been observed that a significant proportion of individuals who had COVID-19 experience persistent debilitating symptoms beyond the acute illness, a condition known as “Long COVID”, “post

COVID syndrome” or “post-acute sequelae of COVID-19”. Notably, cardiorespiratory symptoms such as chest pain, palpitations, fatigue, shortness of breath, and autonomic symptoms are common in this condition ³⁷. The pathophysiological mechanisms leading to these symptoms are still not well understood. However, possible mechanisms that have been postulated are a persistent aberrant immune response, autoimmune response, and persistent viral activity ³⁸, all of which could potentially lead to derangements in cardiovascular health.

Based on above symptoms, cardiovascular involvement appears to be evident in patients with long COVID. However, to date only a handful of studies have objectively assessed vascular health in patients with long COVID and findings from these studies are equivocal ^{20,39}. Moreover, no studies have investigated the long-term risk of cardiovascular disease in patients diagnosed with long COVID. Importantly, the symptoms of long COVID seem to last for well over a year in some patients and given the short timeline of the disease it is not certain whether these detrimental symptoms and health effects are permanent. Likewise, it is unknown whether patients with long COVID are at a higher risk of developing cardiovascular disease. Given the large number of individuals who are suffering from long COVID, and the already existing enormous burden of cardiovascular disease, it is imperative that future studies focus on determining whether long COVID could become a novel risk factor for cardiovascular disease.

Summary

COVID-19 has been shown to cause detrimental effects on the vascular system in the acute phase of the illness as well as beyond the acute phase. However, recent data indicates that these derangements in vascular health caused by COVID-19 may be transient and resolve over time. Thus, although there is evidence to suggest that those who had COVID-19 are at a higher risk for developing cardiovascular disease, it is possible that the elevated risk is also transient. Nevertheless, given these findings it is important to follow up

individuals who had COVID-19 and monitor for potential adverse cardiovascular outcomes. Conversely, although patients with long COVID experience many symptoms suggestive of derangements in cardiovascular function well beyond the acute illness, to date, information on vascular health and cardiovascular disease risk in patients with long COVID is lacking. Further studies are necessary.

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8th Biennial Conference of the South Asian Association of Physiologists (SAAP 8) & 35th Anniversary Academic Sessions of the Physiological Society of Sri Lanka

8th Biennial Conference of the South Asian Association of Physiologists (SAAP 8) & 35th Anniversary Academic Sessions of the Physiological Society of Sri Lanka was held successfully from 11th to 13th November 2022 as a hybrid conference.

The conference flyers were disseminated to the SAAP member countries from the beginning of 2022, and the invitations to all SAAP member countries were sent in April 2022.

Three successful webinars were organized by the publicity committee of the SAAP organizing committee by internationally acclaimed speakers:

- 1st Webinar on 8th April 2022: “The Evolution and Future of the Discipline of Physiology” By Prof Barbara Goodman
- 2nd webinar 3rd November 2022: “The Evolution of Physiology Teaching” by Prof Robert G. Carroll
- 3rd webinar 8th November 2022: “Contents, Context, and Concepts of Medical Sciences in South Asia” by Prof Maj Gen [Retd] Professor Muhammad Aslam

The webinars were excellent and there were many participants from all SAAP member countries.

SAAP-PSSL conference activities:

E-poster presentation session was held successfully as a total virtual event on the 5th November 2022 from 1pm to 4pm. Total 39 E-posters were accepted to be presented. 3 panel of judges judged the E-poster presentations out of them best poster presentation, second and third places were selected. Pre-congress hands-on workshop on autonomic function testing was held on the 11th November 2022 at the new University of Colombo, Faculty of Medicine tower in the Department of Physiology. Eminent researcher Professor K. K. Deepak (MD, PhD), Professor in Physiology at the All India Institute of Medical Sciences, New Delhi contributed as the main resource person, with Prof Savitri Wimalasekera and Dr Chamila Dalpathadu from Sri Lanka contributing as resource persons. The excellent workshop was attended by 55 participants.



Inauguration head table with the Chief guest

The inauguration of the main conference was held on 12th November 2022 at Mihilaka Medura Bandaranaike Memorial International Conference Hall, Colombo, Sri Lanka, with Professor Susirith Mendis, emeritus Professor of Physiology and former vice chancellor of University of Ruhuna gracing the occasion as the chief guest. There were

addresses by the chief guest, president SAAP Prof Kusal Das, President PSSL Prof Piyusha Atapattu and Co-chair of the Conference organizing committee Prof Dinithi Fernando. The K N Seneviratne memorial research award for 2022 was awarded to Dr. Damsara Nandadeva, from the Department of Physiology, Faculty of Medicine University of Peradeniya, for the research paper titled “Blunted Peripheral but Not Cerebral Vasodilator Function in Young Otherwise Healthy Adults with Persistent Symptoms Following COVID-19”. The K.N. Seneviratne Memorial Award for Physiology was awarded to 3 students who obtained the highest marks for physiology at the end of stream basic sciences stream examination at the Faculty of Medicine, University of Colombo. The inaugural issue of the Sri Lanka journal of Physiology was launched at the SAAP-8, PSSL 2022 inauguration by the Editor in Chief Prof Vajira Weerasinghe. The K. N. Seneviratne memorial oration was delivered by Professor Deepthi De Silva, Professor in Physiology, Faculty of Medicine, Kelaniya titled "Insights into physiology through the study of rare genetic diseases". The inauguration was concluded by the vote of thanks by the secretary PSSL Dr Chamila Dalpathadu.



Traditional lighting of the oil lamp

A successful two-day hybrid conference followed with participation of both onsite and online

registrants. The key note address was delivered by Prof Kusal Das, President of the South Asian Association of Physiologists(SAAP) titled “Low oxygen microenvironment and vascular pathophysiology”. Scientific program included two invited lectures from local eminent physiologists and three SAAP senior members from India, Pakistan and Nepal. There were four excellent symposia organized by each of the SAAP countries, which were mostly conducted by online delivery, except for the symposium by India with Prof KK Deepak, and the symposium by Pakistan with Prof Samina Malik participating onsite. It was further enriched by six guest lecturers spanning a wide range of topics.



Prof Kusal Das delivering the SAAP President’s address on zoom

There were two panel discussions which were interesting with interactive participation by the audience, and 4 local symposia delivered by experts in several aspects of physiology. The conference was further enriched by the delivery of the research presentation by the recipient of the 2021 K N Seneviratne memorial award. There were four sessions for free paper presenters, with 24 oral presentations on original research of excellent quality, presented by both junior and senior researchers of all SAAP member countries, delivered onsite and online. The conference was further enriched by two more orations of the Physiological Society of Sri Lanka; the Carlo Fonseka Oration by Prof Panduka Karunanayake,

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Professor in Medicine, Department of Clinical Medicine, Faculty of Medicine, University of Colombo, titled “Rediscovering Physiology in Contemporary Medicine: The Foundational Insights of Claude Bernard” and The Valentine Basnayake Oration by Prof Savithri Wimalasekera, Professor in Physiology Faculty of Medical Sciences, University of Sri Jayawardenapura, titled “Physical activity and Cardiopulmonary function in health and disease”. The successful 2-day conference was concluded on 13th November 2022, with concluding remarks by the SAAP conference co chairpersons, and the President DSAAP Prof Kusal Das. Certificates were awarded to the Best three oral and e-poster presentations at the closing ceremony.



Prof K K Deepak receiving speaker certificate

The post-congress workshop on Online Assessments for Learning and Evaluating Pre-Clinical Sciences of the SAAP-8, PSSL 2022 conference was jointly organized by Physiological Society of Sri Lanka and Centre for Medical Education (CenMED), National University of Singapore. It was conducted at the Faculty of Medicine, University of Colombo, Sri Lanka on 19th November 2022, from 8.30 am to 12.30 pm. This was conducted as a hybrid workshop, with resource persons joining from Singapore, United States and Sri Lanka; Professor Dujeepa D. Samarasekera, the Senior Director of the Centre for

Medical Education (CenMED) and the Senior Advisor of the university’s Centre for Development of Teaching and Learning, Professor Rob Carroll, the Professor of Physiology and Associate Dean for Medical Student Education, Brody School of Medicine at East Carolina University, USA and the chair of Education Committee of the International Union of Physiological Sciences, Professor Chen Zhi Xiong, the Assistant Dean (Education) of NUS Medicine and a Centre for Medical Education (CenMED), Ms Wu Haixin, a Senior Manager at Centre for Instructional Technology (CIT), National University of Singapore and Professor Vajira Weerasinghe, the Chair and Senior Professor of Physiology, Faculty of Medicine, University of Peradeniya, Sri Lanka. There were 72 participants from the South Asian region; Sri Lanka, India, Pakistan, Bangladesh and Nepal. There were 15 participants joining onsite, and 58 participants joining online. The workshop was offered free to participants, which enabled participants with limited resources to make the best use of the valuable workshop.

We thank the president, secretary general and the executive council of the SAAP, all members of the organizing committee of the SAAP-8, PSSL conference, Council members of the Physiological Society of Sri Lanka, all international and local speakers, the chairpersons and judges, and all delegates from SAAP member countries and Sri Lanka who contributed to the success of the conference.

**Prof Piyusha Ataoattu- President PSSL
Prof Dinithi Fernando and Prof Indu Nayayakkara
Co-Chairs SAAP 8-PSSL organizing committee**

More from the SAAP8 - PSSL conference



Medical Research Ethics: A CPD Activity at RYK Medical College Rahim Yar Khan-Pakistan

A CPD activity was arranged for the faculty of RYK Medical college, Rahim Yar Khan PAKISTAN. Title of the seminar was “Introduction to Medical Research Ethics.” Prof Dr Tehseen Iqbal was presenter for this seminar. It was noted that Research Ethics is about creating a mutually respectful relationship with the research population who are called participants (formerly called Subjects). Participants should participate voluntarily. Failure to treat participants with respect can result in data that is misleading, inconclusive or biased. He mentioned the advice to doctors by World Medical Association that “The Health of my patient will be my first consideration.”

Any medical research involving human subjects must be justifiable on scientific grounds. There should be a Scientific Review before Ethical Review of any research project which is the responsibility of Research Supervisor. Approval of Synopsis (Research Plan) is a prerequisite by an Institutional Ethical Review Committee (IERC). IERC ensures that human rights are observed and secured for the participants. Many journals require a certificate from Institutional Ethical Review Committee as a prerequisite for research article publication.



Prof. Dr. Tehseen Iqbal addressing the CPD Activity

Basic principles of Autonomy, Confidentiality, Beneficence and Non-maleficence are taken into consideration. If a photo is to be published to elaborate a sign of disease, mask the identity. Participants data is kept confidential. There should be no ‘cooking’ ‘alteration’ or ‘boosting’ of results. Accuracy of results must be ensured. Both negative and positive results are shown. Proper analysis and use of proper Statistical Test should be applied. There should be no “Guest Authorship.” Author contribution in research or paper writing must be mentioned.

Different aspects of Medical Research Ethics were then summarized. It was pointed out that medical research project should have a sound scientific basis. The researcher should be a competent medical person. Risk Benefit Analysis should be definitely on benefit-side. A representative population should be taken as Participants. Voluntary Informed Consent of Participants is required. A compensation should be decided in case any injury occurs during research. For any Research Project “Honesty is the Best Policy.” Honestly plan, honestly carry out and honestly present data of research project. No plagiarism while writing your research report/article/paper.

Dedicated to the fond memories of Abdus Salam for showing us the research pathway of enlightenment for mankind.

Prof Dr Tehseen Iqbal
RYK Medical College, Rahim Yar Khan-Pakistan



Digitalization of teaching & learning in physiology

Report on a scientific seminar of PPS at Al Nafees Medical College, Isra University Islamabad Campus

Pakistan Physiological society (PPS) held a scientific seminar at Al Nafees Medical College, Isra University Islamabad Campus on 13 Dec, 2022. The title of seminar was digitalization of teaching and learning in Physiology. It was held in collaboration with, South Asian Association of Physiologists (SAAP). Seminar was conducted in hybrid mode to enable outstation participants. It was very well attended by Physiologists from twin cities and online participants.

First speaker was Maj Gen (Retd) Prof Dr Muhammad Aslam. He elaborated the topic of digitalization and impact of technology on current and future learning approaches in Physiology. The conversion of text, pictures, or sound into a digital form that can be processed by a computer is digitalization. Consequently a store house of knowledge in digital format can be created in subject of Physiology. Later on, the key words included in medical subject headings can help to search the required topic and pertinent details. With the help of various tools like computers, internet, smart phones, projectors, and scanners the digitalization can be done easily. Various domains of medical education, including Physiology teaching, learning, assessment, research and even administration have extraordinary dependency on latest ways of digitalization. Moreover, communication through social media at community for imparting knowledge and awareness is effective and motivating.

Prof Aslam also emphasized that, aside from the multitudes of the benefits for these latest technology users, there are certain flaws in modern technology systems. Therefore, the users should have mastery to achieve benefits by technology but at the same time measures for protection and precautions while using different applications and websites are of crucial importance.

The second speaker of topic, Prof Dr. Salma Aslam Kundi, currently Vice President (North) PPS and Principal Women Medical College Abbottabad reflected upon improvement in three areas of Physiology education which include teaching, learning and assessments by technology. She explained that advancing technologies like artificial intelligence, blueprinting and nanotechnology can better link the knowledge with teaching, research, and clinics. To understand, diagnose and to make prognosis of certain diseases are quicker and more convenient by implementing methods of digitalization. Nanotechnology can be applied in vaccine development, cancer therapies, diagnostic applications, and antibiotics resistance.

Prof Dr. Samina Malik, General Secretary SAAP apprised the seminar participants about use of technology in Physiology. Physiology teaching and learning can be made more effective, easy, and quicker by creating google documents, google forms, padlet. She explained that how the breakout rooms by zoom meetings can make the technology use more effective and beneficial. Assignments preparation, submission and interpretation along with other additional features like adding diagrams, graphs and animations are quite interesting and convenient with google tools and documents which can be of help for both students and facilitators.

Last speaker was Dr. Arsalan Ahmed Uqaili from LUMHS Jamshoro. He highlighted the digitalization in the form of online courses, online exams, communication for jobs and marketing blended with traditional ways of communication.

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His narrative was “*Digitization is the integration of digital technologies into everyday life by the digitization of everything that can be digitized.*” He explained participants that the latest systems of digitalization make the students better learner than older educational system. Queries and curiosity to get better understanding can be achieved with great interest, precision, and accuracy. The use of software tools for data acquisition and interpretation are time saving, convenient and accurate. These all means are extremely helpful for Physiology.

Every presentation was followed by question answer sessions from on site as well as online participants and a very fruitful discussion was accomplished on the topic of seminar.



President PPS, Prof Dr Umar Ali Khan, who is also Pro Vice Chancellor of Isra University, Islamabad Campus emphasized the use of technology in understanding Physiology and linking it with pathophysiology of diseases that will help Medical Physiologists to build a solid clinical base of future doctors of Pakistan. He advised PPS to hold such seminars regularly.

In the end President PPS, Prof Dr Umar Ali Khan, Maj Gen (Retd) Prof Dr Muhammad Aslam and Brig Retd Mazhar Hussain, Vice Principal Fizaia Medical College Islamabad distributed the shields and certificates.

Dr Saadia Zainab
Prof Dr Ghulam Mustafa Lodhi
Prof Dr Umar Ali Khan
Prof Dr Muhammad Aslam

Discussion in progress

Standing on front.....From Right to left..... Prof Dr Salman Tipu Principal Al Nafees Med College, Brig R Prof Dr Mazhar Hussain VP FIZAIA Med College, Maj Gen (Retd) Prof Dr Muhammad Aslam, Prof Dr Umar Ali Khan President PPS and PRO VC Isra University Islamabad Campus, Prof Dr Ghulam Mustafa Gen Secretary PPS.



60th CPD presentation
“The good student is more than a listener – The 12+1 roles of the medical student”
Prof. Dr. Samina Malik

The webinar was hosted by Rehman Medical College, Peshawar on 12.01.2023; arranged by Prof. Dr. Rashid Mahmood, Finance Secretary Pakistan Physiological Society in which Prof. Dr. Samina Malik, HOD, Physiology, UCMD, UOL and Secretary General South Asian Association of Physiologists presented a talk about the 12+1 roles of the medical student, published in Medical Teacher by Karakitsiou in 2012.

Prof. Dr. Samina Malik started her talk with emphasis on four principles of andragogy proposed by Malcolm Knowles, including relevance and purpose, experiencing and problem solving, along with immediate needs and goals. With a focus on these four principles, educators can create learning environments that are custom-made to the specific needs of adult learners. She summarized that being a good student in the medical field includes more than just listening. These roles include “information receiver, role model, mentee, teacher assessor & curriculum evaluator, resource consumer and active participant”. The 12+1 roles of the medical student are corresponding to the 12 roles of the teacher in medical education published in Medical teacher by Harden and Crosby in 2000. When students are involved as partners in medical education, it can lead to a more conducive learning environment. This can result in a more andragogic student-centered approach to medical education, where students are actively involved in their own learning and growth.

It was pointed out that active listeners show better communication skills with their teachers, peers, and patients and ensure high-quality patient care. It will help teacher to share the information effectively. Furthermore, Role Modeling can serve as a source of inspiration for students to develop the skills and attributes necessary for success in their future careers. It

will help teacher facilitate interactive lecturing; help co-students think how they should be. Being a good facilitator aids students’ participation and guidance. The Assessor role encourages and leads the teacher as their right hand. It is expected to create a stress-free curriculum by including students’ perspective. A 21st century medical student is desired to consume learning resources that are based on evidence. Good learning resources provide greater flexibility, personalized learning and better alignment with curricular standards. The meeting ended with the following take home message. “Recognize that students play a dire role in the medical education process by including students as partners in medical education, rather than merely knowledge recipients.” We can reform our understanding of how medical education should be delivered. This approach can lead to a more collaborative and inclusive learning environment, where students are active learners. Contextual feedback was obtained from some teachers and students of RMI out of the participants who were hundreds in number.

In the end Prof Dr Mukhtiar Zaman, Principal Rehman Medical College, Peshawar thanked the Physiology Department, presenter & the audience for an enjoyable interactive session. Both the institutes decided to collaborate on “ Tailoring the roles of a medical teacher & students in Pakistani context based on Focus group discussions”

Compiled by:



Prof. Dr. Rashid Mahmood
HOD, Physiology Department,
Supervisor CPD & Incharge
Postgraduate Medical
Department
Rehman Medical College
Peshawar



Dr. Maimoona Nasreen
Associate Prof. UCM&D

Workshop at Services Institute of Medical Sciences: Developing the research question

Research is an integral part of undergraduate curriculum and postgraduate training. It is mandatory for all doctors/faculty members in order to fulfil the criteria for a certain post. Quality medical journals accept research presented with integrity and deeper knowledge. Among the various components of research, little if ever is talked about the research question. As the final research paper does not include the research question, sometimes the important elements of a research are missing or presented poorly.

This workshop was conceptualized, designed and conducted by Dr. Aysha Zaheer, a life member of Pakistan Physiological Society. It was patronized by Prof. Dr. Farooq Afzal, organized by the Department of Physiology under supervision of Prof. Dr. Muhammed Shoaib. The workshop was attended by 40 registered participants and several listeners. The aims and objectives of this three-hour interactive session were:

- To assist those struggling to find a topic for their research
- Convert it to a proper research question with all its components
- Formulate a question in their own area of interest
- Differentiate a good question from a bad one

Participants were assisted to narrow down their own thoughts, keeping in mind the PICOT and FINER criteria. The aim that all should leave with a proper researchable topic was achieved successfully. The workshop was appreciated and benefitted both the novice and seasoned researcher.

Dr. Aysha Zaheer
Associate Professor, Physiology



Novelties in physiology clinical/applied skills

Report on a scientific seminar of PPS at Al Nafees Medical College, Isra University Islamabad Campus

Pakistan Physiological society (PPS) held a scientific seminar at Al Nafees Medical College, Isra University Islamabad Campus on 17 Jan, 2023. The theme of seminar was novelties in Physiology clinical/applied skills with emphasis on Environmental Physiology and Medicine” in collaboration with South Asian Association of Physiologists(SAAP). A hybrid seminar format was used to accommodate those who were located elsewhere. A large number of Physiologists from the Twin Cities of Islamabad/Rawalpindi and all over participated online and face to face.

Maj Gen (Retd) Prof Dr Muhammad Aslam introduced the subject of environmental physiology and medicine. He discussed the physical geography of the South Asia which is comprised of mountains, plateaus, plains, steppes, deserts, rivers, gorges, valleys and sea/ocean. This diverse physical geography has made various climate zones in South Asia from coldest to hottest and from driest to wettest. The major environmental issues like climate change, geophysical setting, ecosystem changes, pollution, lack of water resources, biodiversity loss and food safety are not uncommon in south Asia. There are several domains of Environmental Physiology which deals the drastic effects of aforementioned hazardous environmental stimuli. e.g. High Attitude Physiology (Mountain Medicine), Deep Sea Physiology (Diving Medicine), Extremes of Temperature Physiology and Exercise/Sports Physiology.

The second speaker of topic, Prof Dr. Brig Retd Mazhar Hussain, Vice Principal Fizaia Medical

College Islamabad, reflected upon the understanding adverse effects of high-altitude hypoxia on human body. He elaborated the levels of high altitude at which symptoms of acute mountain sickness begin and the complications of the condition develop if prompt precautionary measure are not taken, or the commencement of appropriate therapy done. He explained the importance of adaptation or acclimatization at high altitude which protects human body from the development of acute mountain sickness and chronic mountain sickness. He discussed the effects of hyperthermia, hypothermia and low humidity on bodily system. Moreover, he emphasized the genetic association with development of diseases caused by environmental hazards.

Prof Dr. Mahwish Arooj, Director, Department, of Medical Education University College of Medicine and Dentistry, University of Lahore, explained the seminar participants about the effects of carbon monoxide poisoning. She apprised the audience that the excessive use of heating devices in cold weather, incomplete combustion of burning materials, vehicles in poorly ventilated area are the major sources of carbon monoxide production. Being colorless, odorless, and tasteless gas with potent binding affinity with hemoglobin, it readily gets into the body to cause tissue hypoxia. She also emphasized on the precautionary measure to take and management strategies to treat carbon monoxide poisoning.

Noise pollution is another environmental hazard with which diseases for instance deafness, stress disorders, hypertension and cardiac dysfunction become rampant. The presentation was given by Prof Dr. Rashid Mehmood Principal of Rehman Medical College Peshawar. He described various levels of sound intensities and their duration of exposure to cause aforementioned diseases. He defined “Environmental Physiology” as a biological discipline that studies the adaptation of an organism’s physiology to environmental conditions. He elucidated the confluence of factors such as sound, gravity, pressure, and temperature on

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environmental physiology. Various ways of control of noise pollution were included in the discussion. Adverse effects of noise on wildlife, plantation and marine life were well described.

Last speaker of the webinar was Prof. Dr. Taseer Ahmed Khan from University of Karachi. He deliberated on integrated dependency of physiology and environment. Physiology of human body that is correlated with the environment comprised of ecology, evolution, and biological processes. Furthermore, he included temperature, lack of nutrients, natural selection and effects of altitude to make a composite picture of environmental physiology. Explanation of surrounding factors on growth, development, and size of animals was given. Examples of Galapagos tortoise and marine Iguana in different conditions were presented. Pictorial analysis of adverse factors and endocrine disruptors were the part of discussion. Thus, the integrated dependency of physiology and environment was beautifully presented.

Every presentation was followed by question-and-answer sessions with both in-person and online participants, and the topic of the seminar was successfully discussed.

The Pro Vice Chancellor of Isra University's Islamabad Campus and President of PPS, Prof. Dr. Umar Ali Khan, stressed the importance of understanding of environmental Physiology and its relevance to the pathophysiology of diseases in order to help medical Physiologists develop a strong clinical foundation for Pakistan's future medical professionals.

At the conclusion, the shields and certificates were distributed by President PPS, Prof. Dr. Umar Ali Khan, Maj. Gen. (Retd) Prof. Dr. Muhammad Aslam, and Prof. Dr. Farman Wazir from Federal Medical College Islamabad to the Speakers.

Dr Saadia Zainab
Prof Dr Ghulam Mustafa Lodhi
Prof Dr Umar Ali Khan
Prof Dr Muhammad Aslam

Annual General Meeting Physiological Society of Sri Lanka (PSSL)

The Annual General Meeting of The Physiological Society of Sri Lanka (PSSL) was held on the 13th November 2022 at the BMICH as a hybrid event. It concluded with the election of the new executive committee for the year 2023.

The newly appointed committee is as follows.

President	Prof. Sampath Gunawardena
Vice-President	Dr. Chandana Hewage
Secretary	Dr Kushani Atukorala
Assistant Secretary	Dr Damsara Nandadeva
Treasurer	Prof. Mahinda Kommalage
Editor	Dr Lakmali Amarasiri

Committee Members:

Prof. Piyusha Atapattu (Ex- officio)
Dr. Chamila Dalpatadu (Ex- officio)
Dr. Mangala Gunatilake
Dr. Himansu Waidyasekera
Dr. Kumarangie Vithanage
Prof. Vajira Weerasinghe
Dr Nishanthini Pirashanna
Dr Chandana Hewawasam
Prof. Deepthi de Silva
Prof. Sharaine Fernando
Prof. Savithri Wimalasekera
Dr. Marsh Muthuthamby
Dr. Padmini Dahanayake
Prof. Amaranath Karunanayake
Dr. Kaushalya Kulathunga
Dr. Dilesha Wadasinghe
Dr. Lalindra Katriarachchi
Prof. Indu Nanayakkara
Dr. Mathanki Sooriyakanthan

Prof Sampath Gunawardena thanked the membership for appointing him as the President and acknowledged the outgoing President Prof. Piyusha Atapattu and the council for their immense contribution to the PSSSL. Prof. Gunawardena extended his congratulations on the society's inaugural publication of the new journal – 'Sri Lanka journal of Physiology' and stated that the society must strive to continue the journal amidst all challenges, while improving and maintaining its quality. Prof. Gunawardena, also expressed his intention in expanding the membership of the society by having a larger and more diverse membership community. He invited all the members to support the activities of 2023 and requested the membership to work towards improving the quality of the outcomes of the PSSSL



Dr. Kushani Atukorala
Secretary
PSSSL

Upcoming Events

The 10th Federation of the Asian and Oceanian Physiological Societies Congress

FAOPS CONGRESS 2023 November 1-4, 2023
 EXCO, Daegu, Korea

In conjunction with The 75th Annual Meetings of the Korean Physiological Society

New Physiology for the New Normal

KEY DATES

Abstract Submission
 Early-bird Registration
 Young Scientist Travel Awards Submission

Feb 1st - Apr 30th, 2023

Daegu, Korea

Sponsored by: [Logos of various organizations]



Compiled by Professor Piyusha Atapattu
 Advisor, SAAP Bulletin