

MEFOMP 2021 VIRTUAL CONFERENCE: EXPANDING KNOWLEDGE AND MEETING CHALLENGES

Mohammad Hassan Kharita¹, Meshari Alnaaimi², Rabih Hammoud^{3,4},
Refaat AlMazrou⁵, Abdalla Al-Haj⁵ and Huda AlNaemi^{1,4}

¹ Medical Physics Section, Occupational Health and Safety Department, Hamad Medical Corporation, Doha, Qatar

² Radiation Physics Department, Kuwait Cancer Control Center, Kuwait

³ National Center for Cancer Care and Research, Hamad Medical Corporation, Doha, Qatar

⁴ Weill Cornell Medicine-Qatar, Doha, Qatar

⁵ Biomedical Physics Department, King Faisal Specialist Hospital and Research Centre, Riyadh, Saudi Arabia

Abstract— Virtual conferences in light of COVID-19 pandemic raise challenges for organizers, attendees and speakers. Nevertheless, they offer several advantages and have revolutionized the way professionals interact and how conferences of the future might look, even after the pandemic. The Middle East Federation of Organizations of Medical Physics (MEFOMP) in cooperation with the International Atomic Energy Agency (IAEA) organized a virtual medical physics conference that took place between 5 and 7 of April 2021. The conference was endorsed by leading international medical physics organizations and accredited with continuous medical education credits.

The conference enabled attendees to have interactive free access to an in-depth view of future directions, latest advancements and lessons learned from COVID-19 pandemic delivered by internationally renowned leading experts in the field. To facilitate the conference technological demands and connect effectively with the remote audience, a special dedicated website was designed and developed with Zoom Webinar as a virtual platform and an experienced IT technical support team to manage the whole event. The virtual conference opened new possibilities in panel discussion and Q&A sessions. Attendees were asked to answer real time MCQ questions submitted at the end of each lecture. This resulted in a better quality of question and interaction with the attendees. In addition, recordings of presentations were available for download on the conference website. While the in person MEFOMP conference that took place in January 2020 just before the pandemic attracted just about 200 local participants, the virtual 2021 MEFOMP conference registered over 2,900 individuals from 81 countries. This indicated that MEFOMP virtual conference has succeeded to spread knowledge and updates, and made them accessible to a larger and more diverse audience. Some of the MEFOMP first virtual conference experiences, results and lessons learned are shared in this article.

Keywords— Medical Physics, Education, Accreditation, Conference and MEFOMP.

I. INTRODUCTION

COVID-19 virus has had an unparalleled impact on all aspects of our lives [1] it has affected clinical practice, education, and research in medical physics. The Middle East Federation of Organizations of Medical Physics (MEFOMP)

has encouraged medical physicists to play a leading role in fighting this pandemic. Through its website, newsletter and direct communication with its national counterparts, MEFOMP emphasized the importance of protection of staff and patients in addition to the cooperation with physicians for better diagnosis and treatment for the COVID-19 patients [2]. Furthermore, building on the success of the MEFOMP conference that took place in Kuwait in January 2020 just before the pandemic, MEFOMP decided in cooperation with the IAEA to organize the "2021 Virtual MEFOMP Medical Physics Conference" that took place between 5 and 7 April 2021 [3].

The conference aimed to provide professionals and scientists with an in-depth view of future directions, innovations and techniques in the field, overview on latest advances in medical imaging and radiation therapy, artificial intelligence in medical imaging, updates on radionuclide therapy and dosimetry, and to discuss lessons learned from the COVID-19 pandemic. Twenty international leading experts in the field and six speakers from MEFOMP region participated in the conference.

II. ENDORSEMENTS AND ACCREDITATIONS

The conference was endorsed by leading international medical physics organizations, namely: the International Organization for Medical Physics (IOMP), the Asia-Oceania Federation of Organizations for Medical Physics (AFOMP), the European Federation of Organizations for Medical Physics (EFOMP) and the Federation of African Medical Physics Organizations (FAMPO).

The conference was accredited with continuous medical education credits for 15 IOMP Continuous Professional Development (CPD) points and by the Commission for Accreditation of Medical Physics Educational Programs (CAMPEP) for 16 CAMPEP Medical Physics Continuing Education Credit (MPCEC). CAMPEP is the accreditation body for Medical Physics Education program in the United States, which aims to promote consistent quality education of

Medical Physicists by evaluating and accrediting continuing education programs such as conferences. CAMPEP credits is one of the prerequisites for the maintenance of medical physics certificates from the professional organizations such as American Board of Radiology, American Board of Medical Physics and The Canadian College of Physicists in Medicine.

The conference organizing committee was honored to have world class experts and pioneers in various medical physics related fields delivering lectures virtually, through live or recorded presentations and to participate in the live discussions and Multiple Choice Questions (MCQs). At the end of each lecture, MCQs were presented for different purposes: (1) to make sure that the participants attended the sessions; (2) for active interaction between participants and the presenter; (3) for the participants to obtain credits from attending the lecture. As such, participants were required to answer at least 50% of the MCQs to receive the credits. These MCQs represented also a tool to assess the quality of the lecture and the understanding of the participants. Review sessions for recently published medical physics books by their authors took place each day during the conference first breaks and participants were offered to buy these books at 50% discount.

III. REGISTRATION AND ATTENDANCE

With free registration for all countries, the conference had an outstanding registration record with more than 2900 registrants that rival the big and established international meetings. The number of participants attended the conference were over 1900 from 81 countries mainly from the Middle East region (See Figure 1). The healthy percentage ratio of 54% females and 46% males indicates that medical physics field is becoming popular among females in the region. The participants who fulfilled the accreditation criteria (answered 50% of the MCQs generated

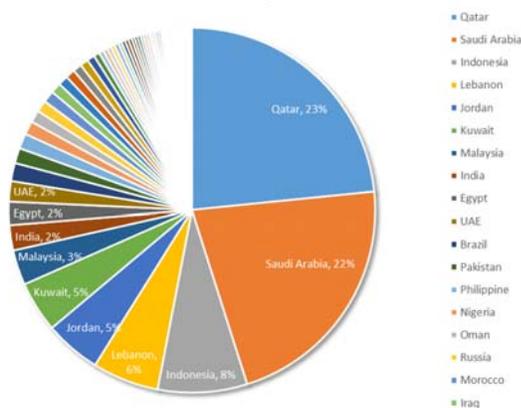


Figure 1 Distribution of conference participants per country

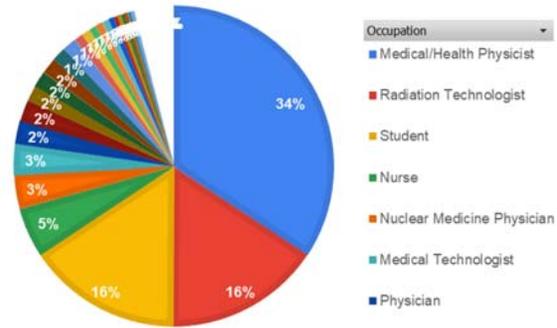


Figure 2 Distribution of conference participants per occupation

at the end of each lecture) and received certificates were about 500 participants from 48 countries.

This indicates MEFOMP's great success in bringing together medical physics and health professionals from the region and across the globe.

The largest groups of participants were medical/health physicists, radiation technologists, students, nurses, Nuclear Medicine physicians, medical technologists and physicians with 34%, 16%, 16%, 5%, 3%, 3% and 2%, respectively (see Figure 2). It is clear that about third of the participants are Medical or Health Physicists. On the other hand, Figure 3 shows that the largest group of participants were working in the fields of diagnostic radiology, then Radiotherapy, Nuclear Medicine, Students and Radiation Protection with 31%, 18%, 14%, 10% and 10%, respectively. Figure 4 shows a group photo taken during the virtual conference.

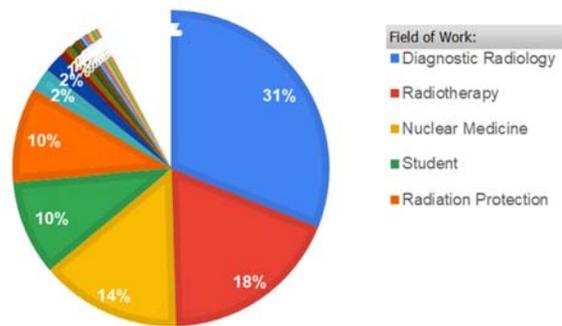


Figure 3 Distribution of conference participants per field of work

IV. PROGRAM AND MAIN TOPICS

The conference highlighted topics in different fields of medical physics including Medical Imaging, Radiation Protection, and Therapy in addition to the current and future



Figure 4 Group photo taken during the virtual conference

directions in this field including Artificial Intelligence, particle therapy, and others. As the fight against COVID-19 is still of the highest priorities for health professionals, the conference further highlighted topics related to the pandemic and its impact in medical sector especially the management and roles of Medical Physics in this crisis.

The conference program was designed to cover general subjects, medical imaging subjects and therapy subjects on daily basis. The general subjects included lectures discussing current and future directions of radiation physics in medicine, IAEA support to medical physics profession and status of medical physics in the Middle East. COVID 19 pandemic effect on running an effective service was also covered including its impact on nuclear medicine and radiology departments. Another lecture was presented exploring the contribution of medical physicists in the Middle East during the pandemic. Radiation protection subjects were also covered in the general sessions, they included lectures about new developments in personal dosimetry and radiation protection of patients and dosimetry of eye lens.

The range of topics in medical imaging were diversified including recent advances in PET/CT and PET/MR and NEMA PET acceptance testing procedures. Using Gallium-67 as theranostic SPECT imaging agent in addition to latest developments in quantitative SPECT/CT were also highlighted. Radiation safety when using Y-90 for hepatic carcinoma and its PET imaging was also covered. Lectures

on artificial intelligence in medical imaging and establishment of diagnostic reference levels in the Middle East were also delivered. Other lectures in medical imaging discussed; Angiographic and Fluoroscopic systems QC protocols, Precise CT dosimetry in diagnosis and radiotherapy, digital breast tomosynthesis and PET/MR in clinical practice.

The lectures in therapy discussed the latest advances in this modality, it included lectures about; novel radiotherapy technologies, recent advances in SGRT, latest advancements in proton therapy, MRI-guided radiotherapy and radiobiology from radium to particle therapy. Conventional radiotherapy subjects were also covered such as dose calculation, small field dosimetry and radiotherapy for pediatric and bariatric patients. Radionuclide therapy subjects had a good space in the program, they discussed updates on radiobiology of radionuclides, towards personalized dosimetry in liver SIRT and updates on radionuclide therapy and dosimetry.

V. CONFERENCE SPONSORS

The main sponsors for the conference were Kuwait Foundation for the Advancement of Sciences (KFAS) and Hamad Medical Corporation (HMC) - Qatar. The gold sponsors were Sedeer Medical, Varian and Ali Bin Ali

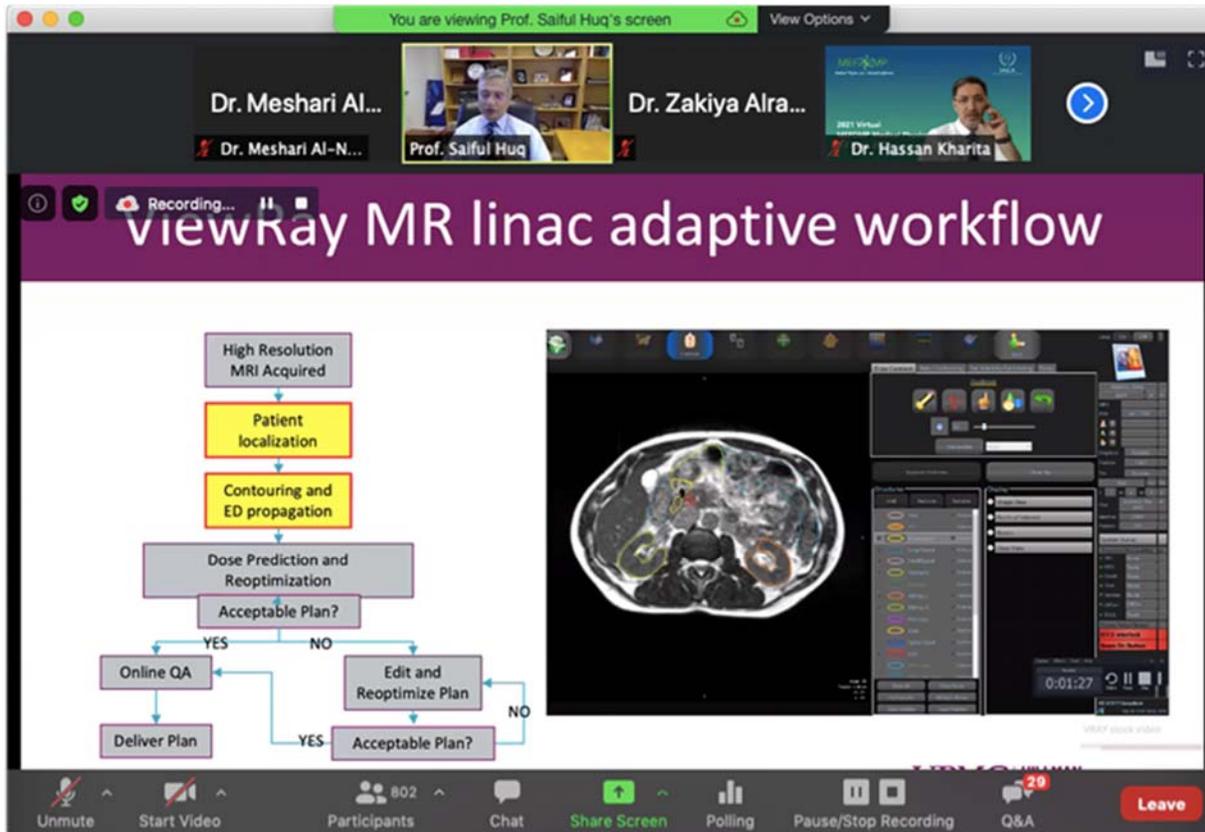


Figure 5 One of the presentations during the virtual conference

Medical & Siemens Healthineers. The silver sponsors were Al Zahrawi Medical, GE Healthcare, Barzan Medical Supplies and IBA – Ion Beam Applications S.A.

The fact that the main sponsors were well-established research foundations such as KFAS and one of the largest medical corporation in the Middle East such as HMC is a strong indication that medical physics seems to gain some momentum in the Middle East.

VI. CONFERENCE CERTIFICATES

For authentication purposes, all certificates issued in relation to this conference were provided with QR code linked to a webpage (https://www.mefomp.com/2021-MEFOMP-Virtual-Conference-Certificates_a7079.html) on MEFOMP website that contains all lists of all:

1. Members of Organizing and Program Committee awarded Appreciation Certificates
2. Names of Speakers awarded Appreciation Certificates
3. Names of sponsor awarded Certificate of Appreciation for Platinum, Gold and Silver Sponsors

4. Names of Session Chairs awarded Appreciation Certificates
5. Names of Participants awarded Participation Certificate

VII. WEBSITE AND PLATFORM

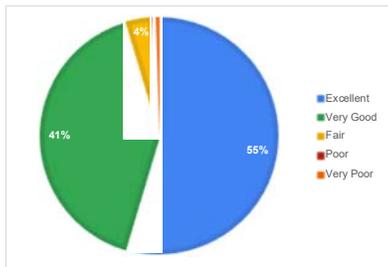
In addition to the official website of MEFOMP, a special dedicated website (link: <https://mefomp-conference.com/>) was designed and developed to manage the conference and to provide all the needed information; about the conference and its committees, program, speakers, partners, sponsors, registration, etc. Zoom Webinar was used as the virtual platform to host this virtual event and manage all meetings, recordings of lectures, managing MCQs through its polls, in addition to the interactive discussion and question and answer sessions.

The conference's poster, program, sponsors and endorsers can be seen on the conference website. All recordings of the conference presentations and certificates information are available on MEFOMP official website: www.mefomp.com.

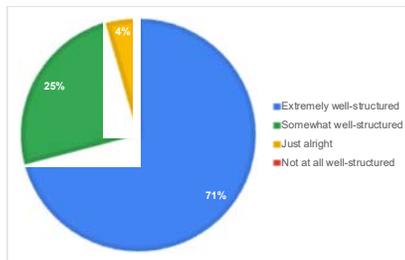
VIII. PARTICIPANTS FEEDBACK

A feedback survey was sent to the participants of the conference. Below are the results of the feedback from of about 600 participants who answered the questions of the survey:

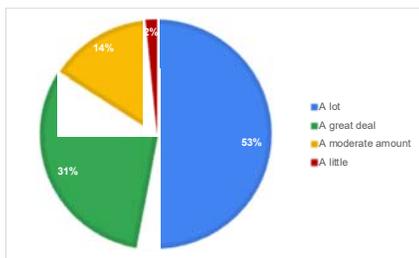
- How was your total experience with 2021 MEFOMP Conference?
55% of participants responded to the survey answered “Excellent” and 41% answered “Very Good”.



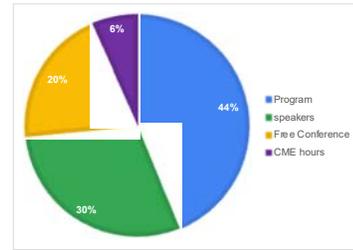
- How well-structured was the conference program?
Over 71% answered “extremely well-structured” and 25% answered “somewhat well-structured”.



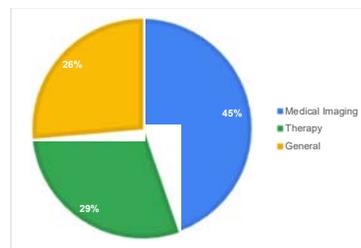
- How much have your knowledge improved after the conference?
Overwhelming positive response with over 53% replied “A lot” and 31% replied “A great deal”.



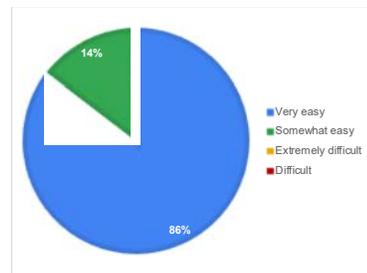
- What attracted you most to the conference?
44% of the participants said the program, 30% for the speakers and 20% for the free conference whereas only 6% for the CME or CPD points.



- Which session attracted you most during the conference?
The answers were 45% for medical imaging, 29% for therapy and 26% for the general sessions.



- How easy was it to access and use Zoom platform?
86% of the participants answered “Very easy” while 14% answered “Somewhat easy”.



IX. CONCLUSIONS

The virtual 2021 MEFOMP Medical Physics conference attracted over 2,900 individuals from 81 countries. This indicated that this virtual conference has succeeded to spread knowledge and updates and made them accessible to a larger and more diverse audience. The conference has put MEFOMP firmly on the medical physics world map. The large number of participants that rival the big and well-established international meetings; the world class speakers; and the excellent IT infrastructure were essentials to the phenomenal success of the conference.

Furthermore, the accreditation and endorsement granted by international and regional medical physics bodies were an important boost to popularity of the conference.

In addition to vendor's support, the participation of large medical and research institutions such as HMC and KFAS is a clear indication that medical physics is gaining more momentum in the Middle East Region.

Finally, the feedback from participants showed that the majority had excellent experience with the conference. Most participants said that the program is well-structured, it has improved their knowledge. Mostly the program, then the speakers and the free registration attracted participants.

ACKNOWLEDGEMENT

The authors would like to thank all the MEFOMP Executive Committee members for their excellent support before and during the conference.

The authors would like to acknowledge Ms Aman Jobeir for her excellent management for the website and the Zoom Platform for the conference.

The authors also appreciate the excellent contribution from Mr Chief Marck Briones De Castro in the design of the conference certificates and their authentication system.

REFERENCES

1. Medical Physics during the COVID-19 Pandemic: Global Perspectives in clinical practice, education, and research, Edited by Kwan Hoong Ng, Magdalena S. Stoeva, Published March, 2021 by CRC Press of Taylor & Francis Group. <https://www.routledge.com/Medical-Physics-During-the-COVID-19-Pandemic-Global-Perspectives-in-Clinical/Ng-Stoeva/p/book/9780367693756>
2. MEFOMP official website <https://www.mefomp.com/>.
3. Official website for the 2021 Virtual MEFOMP Medical Physics Conference <https://mefomp-conference.com/>

Contact information of the corresponding author:

Author: Mohammad Hassan Kharita
Institute: Medical Physics Section, Hamad Medical Corporation
Street: C-ring Road
City: Doha, 3050
Country: Qatar
Email: mkharita@hamad.qa