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# Continuing Professional Development Evaluation: Two Rapid Review Courses in Nephrology and Rheumatology

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## *Abstract*

**Objectives:** Continuing professional development (CPD) is a novel approach to increase professional knowledge and skills. The aim of this study is to explore participants' characteristics and to understand participants' views on two rapid review courses (RRCs) as part of CPD program, and to assess healthcare providers' views about the use of internet for accessing medical information.

**Methods:** Data were collected from 150 participants who attended an RRC in Nephrology and Rheumatology as part of an ongoing CME program.

**Results:** Participants' response rate was 92% and 84.4% in Nephrology and Rheumatology RRCs, respectively. Participants' Mean Age±SD were 39±2.1 and 41±2.1 years in the Nephrology and Rheumatology courses, respectively. Demographic variables, i.e., age, gender, and specialization showed a significant ($p<0.01$) impact on the learning objectives of the program. Further, participants reported that the course material had a significant ($p<0.02$) impact on their knowledge. Finding new medical information was the primary motive to search the internet among all participants. About half of the subjects reported knowledge of their preferred medical education sites and had access at their clinical setup. Barriers to internet use included lack of specific information, difficulty to download contents, and excessive material. Professional association websites, online journals, and CME programs were the most frequently searched sources of information. Most of the subjects reported significant ($p<0.02$) barriers to find medical resources on the internet and to adequately utilize the currently available medical search engines available in the healthcare system.

**Conclusion:** A discipline specific and integrated CPD program may have provided dual benefit such as accredited CME hours and a significant change in the participants' knowledge. There is a need to increase Internet accessibility and capacity in the current healthcare facilities. Future CPD studies should include measuring participants' knowledge and skills "pre and post" course delivery, and a detailed evaluation of the course program.

**Keywords:** CME; CPD; Medical Education; UAE.

## Introduction

The provision of world-class healthcare through enhancing healthcare services and upgrading the standards is a major component of the national strategy in the United Arab Emirates (UAE).[1] The health authority has therefore, adapted a mandatory policy to encourage all healthcare providers to obtain adequate number of accredited continuing medical education (CME) hours per year to keep-up with trends of knowledge and skills in disease prevention, diagnosis and treatment. The outcome of such programs is expected to have a positive impact on the overall healthcare system and may lead to a better patient care and improve the health of the population. Physicians, pharmacists and nurses are often required to accumulate adequate CME hours at license renewal. To facilitate CME requirements, numerous health education initiatives and events are organized each year. Educational meetings including review courses, workshops and international scientific conferences are common CME activities in the country.

Among other methods, continuing professional development (CPD) is a comprehensive method that emphasizes on self-directed approach to education,[2] and an important strategic tool for improving healthcare.[3] Such CPD programs (CPDP) focus on the individual learning requirements throughout their professional career.[4] Programs using interactive educational format in CPD are more likely to have a greater effect than those using a didactic format in CME. Furthermore, multifaceted interventions had greater effects than single interventions.[5,6] In addition, the use of Internet by healthcare professionals has been studied with diminutive consideration to how current medical professional learning and changing philosophies relate to Internet information pursuing on

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learning performances. However, existing challenges especially in the developing countries, may limit access to the internet and the ability of individuals to identify reliable health information sources on the internet.[7] Other common CME activities are audit and feedback,[8] and educational outreach,[9] both of which are frequently combined with educational meetings. Quality improvement activities, which are closely related to continuing education,[10] also commonly use small interactive meetings to facilitate learning and improvements in practice. Undoubtedly, the nature of educational meetings is highly variable in terms of contents, number of participants, degree and type of interaction, length, frequency, as well as the targeted practices.

In line with the aforementioned strategic policies, the Faculty of Medicine and Health Sciences (FMHS) along with the United Arab Emirates University (UAEU) offer accreditation to CME programs aimed at increasing knowledge and skills for medical professionals in the region. Endeavoring to remain at the forefront of CME in the region, FMHS sets high standards in CME accreditation with continuous improvement of CME quality and delivery. This study aims to explore the selection criteria for the CPD attendees, evaluation of the two RRCs and evaluation of internet search for medical information.

## Methods

The CPD program was developed by the Internal Medicine CPD Committee at the Faculty of Medicine, UAE University. The two RRCs were delivered in a conference facility at Al Ain, UAE between February 2009 and July 2009. The CPD committee meets once per month to develop CME activities according to needs assessment and to identify speakers, and organize the events. The goal of the CPD committee is to create a high level educational culture and enrich the clinical practice among healthcare professionals within Al Ain City and subsequently, the UAE. The target CME activities include practicing physicians, residents, medical students, nurses and pharmacists. The CPD committee adheres to the accreditation requirements in UAE. All CPDC members contribute to the organization and monitoring of the activities to ensure high standard in accordance with Health Authority Abu Dhabi (HAAD) Guidelines.

The study population consisted of 150 health providers including; medical physicians, surgeons, nurses, pharmacists and medical students. All participants gave their consent. The complete self-reported questionnaires were collected by the organizers. The participants completed the study questionnaires which were tendered to the organizers at the end of the educational activity. Participants answered questions pertaining to sociodemographic profile, age (age strata-years), gender, nationality, marital status, qualifications, place of work (public sector, private sector), nature of clinical practice (hospital, polyclinic and clinic), profession, and home language (Arabic, Urdu/Hindu, English, African, Farsi, Latin, French, Dutch, Tagalog, and others).

Each event included case based lecturers presented by six to eight speakers. The last lecture in the row was a case-based panel discussion and summary delivered by the RRC program director (AS). Each of the RRC syllabuses have been revised (by a panel of experts), validated in terms of objectives, contents and appropriateness to the benchmark review courses in the United States and Europe, and subsequently the courses were delivered as a full-day event. Each of these events was CME accredited.

Each RRC covered all aspects of the common condition in question (disease, investigations, management, evidence-based approach, case studies and interactive cases scenarios). Each RRC was delivered over 6 hours on a weekend. The period between both programs was one month. Each of the RRCs was delivered by professors from the FMHS-UAE University and consultant physicians from across UAE hospitals.

The one-day course of topics presented at the RRC covered relevant areas of Nephrology curriculum (hematuria, glomerular diseases, acute renal failure, chronic kidney disease, and end-stage renal failure [ESRF]) and Rheumatology curriculum (gout, pseudo gout, rheumatoid arthritis, systemic lupus erythematosus [SLE], spondyloarthropathies, polymyosistis, dermatomyosistis, fibromyalgia) detailing the pathological disease process, symptoms, diagnosis and management, delivered in structured fashion. The participants' understanding of the course content was evaluated by using a 5-point Likert Scale (the sum of responses on several Likert Scale items) according to common criterion; speaker, content, presentation and interactiveness. At the end of each RRC, a panel discussion consisting of the program director and speakers was followed by case scenarios relevant to the course curriculum.

A questionnaire developed by the IMCPDC was used to examine the views of healthcare providers towards the RRC program and demonstrate the correlates of demographics. The first part of the questionnaire included questions pertaining to general socio-demographics like age, gender, marital status, etc. The second part included 10-statement questions of which the first four statements were to identify challenges in internet access and individuals' ability to identify reliable medical information on the internet. The remaining six statements were designed to identify the participant's views and satisfaction level about the course material, delivery, and the usefulness of these RRC in improving their knowledge for day-to-day practice. Each statement was provided with five choices: strongly agree (5), agree (4), neutral (3), disagree (2), and strongly disagree (1), and the mean value on the Likert Scale was calculated.

Data are presented as proportions, Medians or Means±Standard Deviations (SDs) as appropriate. Differences in categorical variables between respective comparison groups were analyzed using the Chi-square test. The continuous variables were analyzed using one way analysis of variance. A $p$-value of $<0.05$ was considered significant. Data analyses were carried out using the Statistical Package for Social Sciences, version 17 (SPSS Inc., Cary, NC, USA).

## Results

Overall, the number of participants was 90 and 80 individuals with a response rate of 84.4% and 92.5% in the Nephrology and Rheumatology RRCs, respectively. It is worth noting that data is conveniently presented side by side but not for the purpose of comparing the results from the two RRC.

**Table 1**: Socio-demographic profile of the participants in the two RRCs.

| Characteristics | Nephrology N(%) | Rheumatology N(%) |
|---|---|---|
| **Age (years)** | | |
| 20-29 | 18(23.7) | 10(13.5) |
| 30-39 | 26(34.2) | 16(21.6) |
| 40-49 | 17(22.4) | 18(24.4) |
| 50-59 | 14(18.4) | 24(32.4) |
| >60 | 1(1.3) | 6(8.1) |
| **Gender** | | |
| Male | 10(13.2) | 20(27.0) |
| Female | 66(86.8) | 54(73.0) |
| **Marital status** | | |
| Single | 17(22.4) | 14(18.9) |
| Married | 57(75.0) | 60(81.1) |
| **Nationality** | | |
| UAE | 13(17.1) | 12(16.2) |
| Arabs | 17(22.4) | 22(29.8) |
| Asians | 42(55.3) | 34(45.9) |
| Others | 4(5.2) | 6(8.1) |
| **Healthcare providers** | | |
| Consultants | 2(2.6) | 8(10.8) |
| Specialists | 2(2.6) | 20(27.0) |
| General practitioners | 21(27.6) | 14(18.9) |
| Interns | 29(30.2) | 18(24.3) |
| Medical students | 7(2.6) | 6(5.4) |
| Pharmacists | 1(1.3) | - |
| Nurses | 34(44.9) | 18(24.4) |
| Response rate | 76(84.4) | 74(92.5) |
| Total participants | 90(100) | 80(100) |
| **Healthcare facilities** | | |
| Private | 30(39.5) | 34(45.9) |
| Public | 46(60.5) | 40(54.1) |
| **Clinical practice** | | |
| Hospital | 34(44.7) | 42(56.8) |
| Clinic | 36(47.4) | 22(29.7) |
| Polyclinic | 5(6.6) | 8(10.8) |
| Pharmacy | 1(1.3) | 2(2.7) |

Table 1 shows the descriptive data regarding the characteristics of the participants. Participants' mean age ±SD was 39±2.1 and 41±2.1 years in the Nephrology and Rheumatology courses, respectively. There was a preponderance of females over males in both activities. Most of the participants were Arabs and more so subcontinent Asians. While the bulk of attendees in the Nephrology course were mainly nurses, interns, and to lesser extent general practitioners. The Rheumatology course attracted a significant number of specialists. Interestingly, these demographic variables, i.e., age, gender, and specialization showed a significant impact on the learning objectives of the program ($p<0.01$). Further, participants reported that the course materials had a significant impact on their knowledge ($p<0.02$).

**Table 2:** Perceptions on the use of internet search for medical information among Nephrology and Rheumatology RRC attendees.

| Statement | Nephrology (%) | Rheumatology (%) |
|---|---|---|
| **Primary motivation to search the internet** | | |
| New information in a disease area | 43.4 | 48.6 |
| Latest research in specific topic | 29.6 | 17.5 |
| New therapy or product information | 13.7 | 12.8 |
| Drug dosing information | 12.1 | 12.4 |
| Specific patient problem | 11.2 | 8.7 |
| **Facilitators of Internet search** | | |
| Knowing the sites I prefer | 43.4 | 40.6 |
| Access in my clinical setting | 23.8 | 22.9 |
| Having refined my searching skills | 15.3 | 16.5 |
| Designated time on my calendar for searching | 14.0 | 16.0 |
| Available technical help | 3.5 | 4.0 |
| **Internet barriers** | | |
| Difficulty to download information | 28.9 | 35.0 |
| Specific information not available | 30.3 | 32.4 |
| Too much information to scan | 22.5 | 25.7 |
| Internet too slow | 9.3 | 2.4 |
| Software incompatibilities | 9.0 | 4.5 |
| **Sources most frequently searched on the Internet** | | |
| Professional association web sites | 36.7 | 33.4 |
| Online journals | 27.6 | 27.5 |
| CME programs | 22.9 | 21.8 |
| Medical point-of-care database | 7.2 | 9.4 |
| Colleagues via email | 5.5 | 7.9 |

Finding new medical information was the primary motive to search the internet among all participants. About half of the subjects reported knowledge of their preferred medical education sites and had access at their clinical setup. Barriers to internet use included lack of specific information, difficulty to download

contents, and excessive irrelevant material. Professional association websites, online journals, and CME programs were the most frequently searched sources of information. Most of the subjects reported significant ($p<0.02$) barriers to find medical resources on the Internet and to adequately utilize the currently available medical search engines, available in the healthcare system. Excess information results from search engines was reported to be a barrier to internet education among 37.8% of participants, while the lack of available specific information on other information was reported by 30.3%. Among the attendees, 28.9% and 35.1% of those who attended the Nephrology and Rheumatology courses, respectively, reported significant difficulties in downloading medical information from the Internet. Participants in Nephrology (36.8%) and Rheumatology (32.4%) reported professional associations' websites as the preferred source for medical information on the Internet.

In both courses, there was no statistically significant association between primary motivation for medical information searching on the Internet and the respondents' socio-demographics, i.e., age, gender, nationality and the healthcare facility ($p>0.05$); however, there was a significant correlation between the facilitators of Internet searching and sources more frequently searched on the Internet with healthcare facility ($p<0.002$). Respondents strongly agreed that they recognized the characteristic of disorders in Rheumatology (27.0%) and nephrology (25.0%). Furthermore, the participants in the Rheumatology (94.6%) and Nephrology (84.3%) RRCs scored higher in terms of the content, and the relevance of the RRC to deal with Rheumatology and Nephrology problems that were real to them. Similarly, the participants' satisfaction level was 64.9% for Rheumatology and 60.6% for Nephrology RRCs, (Table 3). By the end of the course, the participants reported to have recognized the characteristic of disorders in both Rheumatology and Nephrology.

**Table 3** Evaluation: Nephrology and Rheumatology Rapid Review Course (RRC).

| Statements | Nephrology | | | | | | Rheumatology | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Str. Ag | Agree | Neutral | Dis. | Str. Dis. | MS | Str. A | Agree | Neutral | Dis. | Str. Dis. | MS |
| RRC helped me recognize characteristics of Nephrology/ Rheumatology diseases | 19 (25.0) | 49 (64.5) | 8 (10.5) | - | - | 4.1± 0.06 [a] | 20 (27.0) | 54 (73.0) | - | - | - | 4.3± 0.07 [a] |
| RCC helped me identify challenges to Nephrology /Rheumatology disease management | 14 (18.4) | 56 (73.7) | 6 (07.9) | - | - | 4.1± 0.05 [b] | 16 (21.6) | 50 (67.6) | 8 (10.8) | - | - | 4.1± 0.09 [b] |
| The facilitators made me feel free to express what I really thought | 11 (14.5) | 48 (63.2) | 17 (22.4) | - | - | 3.9± 0.06 [b] | 12 (16.2) | 46 (62.2) | 16 (21.6) | - | - | 3.9± 0.10 [b] |
| I felt comfortable saying what I really felt in front of my peers/colleagues/ speakers/ preceptors | 7 (09.2) | 50 (65.8) | 16 (21.1) | 3 (03.9) | - | 3.8± 0.07 [b] | 8 (10.8) | 48 (64.9) | 18 (24.3) | - | - | 3.9± 0.09 [b] |
| The content of the RRC dealt with Nephrology/ Rheumatology problems that were real to me | 14 (18.4) | 50 (65.9) | 9 (11.8) | 2 (02.6) | 1 (01.3) | 3.9± 0.08 [a] | 16 (21.6) | 54 (73.0) | 4 (05.4) | - | - | 4.2± 0.08 [a] |
| I am satisfied with my own level of Nephrology/ Rheumatology knowledge | 9 (11.8) | 37 (48.8) | 14 (18.4) | 13 (17.1) | 3 (03.9) | 3.5± 0.01 [a] | 10 (13.5) | 38 (51.4) | 24 (32.4) | 2 (02.7) | - | 3.8± 0.10 [a] |

*MS; mean ± standard error of mean (of the Likert Scale Mean score), Str.Dis; Strongly disagree, Str.A; Strongly agree, Significance level: [a,b]p>0.05.*

## Discussion

This study reports several important findings. On average, the subjects were of the middle age group, mostly females, but not among senior specialist physicians, particularly, in Nephrology discipline. While such information may help CME tutors adequately plan CME activities, the results stress the importance of even larger data collection among participants of CME programs to better understand the nature of the audience and properly address educational issues of common interest. Moreover, the lack of consultants and specialist, especially, in the Nephrology program, may not be surprising given the fact that senior staff members have access to far more specialized educational material either through regular conferences (national and/or international), or through membership in major various international societies. Nonetheless, the large difference in the professional ranking of the attendees of

the two RRC could not be explained from the current data.

The innovative information in the presented disease areas was the primary motivation for medical information searching on the Internet. Similar findings have previously been reported elsewhere.[11,12,13]

Health information-seeking behavior varies depending on the type of information required, reasons for, and know-how of searching.[14] In fact, research shows that health professionals' use of the internet to obtain medical information has amplified over time.[15,16] An important finding of this study was the participants' views regarding their access and ability to use reliable medical information from the internet. Undoubtedly, there are increasing trends towards providing interactive CME programs on the internet.[17,18] However, only one-third of the subjects reported having full access to the internet. Such finding was rather surprising since most, if not all of the clinical facilities in the UAE are of high standard, at least in terms of infrastructure. Moreover, our subjects reported several other obstacles, i.e., lack of specific information, difficulty to download contents, and excessive material. The latter reflects the nature of the internet, whereas the lack of available specific medical information as reported by the attendees, may be related to the individuals' knowledge and ability to identify reliable sources such as PubMed. Again, difficulties in downloading medical information, is unjustified given the high-speed nature of the Internet in the UAE. Nevertheless, professional sites for CPD may consider these difficulties in downloading medical information and may thus explore means to overcome such difficulties, especially in the developing world. Taken together, our findings emphasize that internet barriers should be explored when considering web-based learning as reported by others.[19,20]

Our RRC activities were designed to provide opportunities for physicians, pharmacists and nurses to earn quality CME credits and to increase their critical clinical knowledge in diverse medical disorders relevant to both Nephrology and Rheumatology disciplines. The high response rate to the questionnaire in both RRC, entail encouraging environment and willingness among participants to provide feedback on the CME and the CME presenters.[21] Such positive attitude towards CME programs will further encourage organizers of these courses to implement much needed improvements not only in course contents, but also delivery methods and improve presenters' efficiency as opposed to effectively.

The relatively small number of participants in both RRC may have limited the accuracy of the findings. The impact of the rapid review courses with a pre-post survey design was not evaluated, which could have been stronger with questions assessing participant knowledge and confidence. Further, the role of the university/medical college (FMHS) in conducting the CME was not addressed.

## Conclusions

The rapid review courses provided significant opportunity for physicians, pharmacists and nurses to increase their knowledge and to obtain CME credits in Nephrology and Rheumatology RRCs.

The selection criteria for CME/CPD attendees should take into account the relevant clinical practice of the participants undertaking the CPD courses (GOAL 1). The participants in reported CPD events acquired accredited CME hours and a significant change in the perception. Future CPD studies should include measuring participants' knowledge and skills "pre and post" course delivery, and a detailed evaluation of the course program, intervention, target audience, teaching techniques, and practical sessions to improve skills (GOAL 2).

Providing free Internet access and increased internet-searching capacity in the current healthcare facilities (GOAL 3) is strongly recommended. Programs aimed at delivering a successful CME and CPD may consider taking note of the current promoters and obstacles identified in this study. The study findings are applicable in other similar CPD settings with enhanced validity.

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