RESEARCH ARTICLE

Neph E Club-Successful Social Media Learning Model-Six Years on with 1K Nephrologist as Members

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ABSTRACT

Introduction: Social Media (SoMe) is used for the rapid dissemination of information and learning but has its limiting factors. An integrated learning model labeled "Neph E Club" was initiated in 2015. Various social media platforms were used to achieve the goal of SoMe education and lifelong learning. A retrospective study was done to analyze this education model.

Methods: Six years of experience with Neph E Club's social media education model allowed us to look back on the essential components of the SoMe model from 2015 to 2021. Objectives, member recruitment, social media platform, content development, and sustainability were among the aspects investigated and analyzed. Its benefits and downsides were also investigated.

Results: For the past 6 years, WhatsApp has been used as a SoMe platform. Other approaches such as Twitter, YouTube, dedicated server, and email methods failed to meet the target during the 6 years. There are now 1018 active members in the WhatsApp group. Downloading nephrology education resources from numerous social media learning websites and conference content to construct a 3 TB digital library and 800 GB of developed and shared content. Members were kept informed daily by sharing information gleaned from the digital library. Topics are chosen based on data analysis and group requests. Students and practitioners shared their contents which included case discussion and initiating data collections. The success of this model is reflected by having shared 2550 Audiovisual (AV) Lectures, 26700 journal articles, and 182 case discussions. Viewership numbers on average reach from 1200 to 2500 per month which indicated multiple sharing. ISN India in his presidential speech in 2017 recommended this model.

Conclusion: Neph E Club - Integrated model of learning using SoMe and offline digital Nephrology Library is a cost-effective, widely accepted model of learning in India.

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INTRODUCTION

The importance of social media as a source of learning platform in Nephrology is increasingly being recognized. With the advent of web 2.0 where information sharing has become bidirectional and interactive, the number of users using social media and their involvement is growing [1]. The social media platform commonly used by nephrology practitioners and academicians include YouTube, Facebook, Linkedin, Twitter, blogs. Many individuals, institution, and association utilize their dedicated servers to host their social media content [2]. Every interaction is under the control of the admin or subscriber of the server who decides the nature of the content. All these rapid changes have shifted learning goals post to digital learning to achieve the goal of lifelong learning [3,4]. Various societies are now actively promoting the use of social media in nephrology and training nephrologists for this
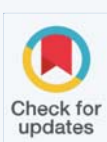
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purpose with the hope that they shall be future leaders in medicine and acquire modern communication skills that are not routinely taught in traditional training [5].

Although social media is a powerful tool that empowers individuals to put out their ideas and narrative, it has its pitfalls especially in propagating fake narrative or revealing certain patient-related confidential information. Deficiencies in monitoring the social media content are still a major issue apart from the paucity of nephrologists trained in nephrology education content creation [6].

Offline learning is still followed in certain libraries and countries where the internet is slow or in remote areas in low-income countries [7]. With a flood of information available online assimilation and storing these data it is a challenge in the offline learning model. WhatsApp has also been effectively used in nephrology teaching as a focus group activity that shares educational contents to a common intent audience such as a nephrologist group [5-7].

The present study is to analyze the experience of the Neph E Club model of learning initiated in 2015 and retrospectively study and analyze the utility of how social media can be harnessed to disseminate education and keep a focused group of nephrology practitioners updated in nephrology education.

METHODS

A retrospective study was done to analyze social media nephrology education activities. The education model titled "Neph E Club nephrology update" was initiated in the year June 2015 until June 2021. The following aspects were studied that included

- Neph E Club objectives, member's eligibility criteria, choice of social media platform that enabled members to join and interact

- To analyze nephrology education content creation, software used, content sharing, the role of admin, and cost analysis.

- To analyze the educative preference of group members by looking into the media content accessed traffic.

- To analyze suitability in creating offline library content for future utilization by Nephrology members practicing in rural areas and other far-flung areas with limited resources.

- To identify the drawbacks of various social media platforms used for education.

Excluded from this study were those who were non-nephrologist and their contents. All contents and patient data that violates patient privacy policy were excluded and not included in this study. All ethical issues pertaining to social media rules were taken in consideration adequately in this study.

RESULTS

The period of retrospective study was from Jun 2015 till Jun 2021. In 2015 the concept of "Neph E Club" social media in education was formulated to bring as many nephrologists into an interactive platform and achieve the goal of lifelong learning. Table 1 shows the details of members, various social media platforms like email, YouTube, Twitter, dedicated hired web server, and WhatsApp platform which was used since 2015. The email list consisted of 42 members but was discontinued from 2016. YouTube subscription was initiated in the year 2016 had only 20 subscribers and subsequently abandoned in 2018. Twitter services had 120 followers majority of whom were non-nephrologists. The handle was discontinued in 2016. The server was rented from a private service provider and program configured under web address www.ckdregistry.com. Provisions were made for uploading files and videos. Provision was also made for data entry, search, and QR code generation. The site was in utilization until 2020 when during the covid pandemic the cost of its maintenance increased and service was disconnected for non-payment of monthly subscription.

The WhatsApp group was initiated in June 2015 and continued to date as the only surviving platform of nephrology education. The first group was created on 18th June 2015 titled Nephrology update group (gp) 1 it started with 48 members in 2015 and reached the permitted limit of 256. Nephrology update gp 2 started on 30th Nov 2016 and reached saturation 256 members by 2018, Nephrology update gp3 started on 13 Dec 2016 with members of 30 and reached 256 full house by 2019 and Nephrology Update gp4 started on 21st Jan 2019 with 133 members and reached 256 by 2021. The year-wise number of nephrology practitioners joining the Neph E Club was 48 members in the first group which increased to 91 in the second year, 521 in the third year, 753 in the fourth, 901 in the fifth year, and 1018 as of Jun 2021.

The composition of each group included retired professors 86, university faculty 252, practicing nephrologist consultants 467, post-doctoral students' trainee in nephrology 201, and others including medical, pharma personnel, physicians 12.

Nephrology practitioners from urban or semi-urban areas were 782, rural practitioners 236, Indian Members 975, other countries included 23 from the Asia Pacific and 10 from the USA and Africa 4. Members who were office bearers of the National and International society including president and ex-president of ISN India and current office bearers of Indian society of nephrology, Indian society of peritoneal dialysis, Indian society of organ transplant Active NMSC members were all from India.

Table 1: Demography of members in the social media learning. WA: WhatsApp; Neph: Nephrology; Mem: Members.

S. No	Jun 2015-May 2016	Jun 2016-May 2017	June 2017-May 2018	Jun 2018- May 2019	June 2019-May 2020	June 2020-May 2021
E Mail Members	42	Abandoned	-	-	-	-
You Tube Subscribers	10	20	Abandoned	-	-	-
ckdregisrty.com server traffic	-	Subscription initiated	1700 per/mo	12500 per/mo	Subscription stopped	-
Twitter	120 Followers	Withdrawn handle	-	-	-	-
WA Gp Mem.						
Neph update 1	48	50	256	256	256	256
Neph update 2	-	41	235	256	256	256
Neph update 3	-	-	30	241	256	256
Neph update 4	-	-	-	-	133	250
Total	48	91	521	753	901	1018
Mem. profile						
i) Prof	18	24	63	72	81	86
ii) Faculty uni	12	28	198	212	213	252
iii) Practicing nephrologist	10	12	201	290	402	467
iv) Trainees	6	18	49	159	178	201
v) Others	2	8	10	10	25	12
Members						
i) Urban	35	78	457	559	698	782
ii) Rural	5	11	78	194	203	236
iii) India	43	78	498	713	862	975
iv) Asian non Indian	2	11	21	25	25	23
v) Africa	-		2	4	4	4
vi) others	1	1	10	10	10	10
Members discontinued						
i) Death	3	1	Nil	1	6	8
ii) Not willing	18	22	14	12	8	6
iii) Other reason	10	22	11	8	3	2
iv) Deleted	5	11	2	6	3	2
Admin WA gp	2	2	2	2	2	2

Content Creation- The software and types of equipment used to create educational materials included apart from the basic desktop system, internet included installed software like internet downloader, YouTube downloader, movie editor software, Twitter downloader, edit software filmora, and Microsoft office and small pdf convertor and QR code generator. Various social media sites from which materials were downloaded included YouTube, Twitter, free journal sites, subscribed journals, and from various nephrology societies including ISN, ERA EDTA, ASN, TTS, glomcon, ESNT, HDCN, and 75 other sites.

All downloaded content was stored into 3TB hard disk data storage forming the downloaded digital library content from which WhatsApp content was created. Total downloaded data until 2021 was equal to 3 TB and total content data created was 319GB.

The recurring cost involved for the creation of content average USD 10 per day with a daily content generation of 20-40 MB per day and from the initial cost of 500USD per month is now limited to 350USD per month after all other platforms were discontinued.

Educative preference of members included updates from various teaching slides from ASN, HDCN, ISN, ERA EDTA Nephrology education and Glomcon, and 35 other sites. Each downloaded content was segregated and saved in folders with specific titles allocated topic-wise for easy retrieval. Shared content was correspondingly numbered to tally the original file and stored date-wise for retrieval and easy reference. All the stored files doubled up as offline teaching material which could be shared with fellows who wanted it.

Details of contents created and shared are depicted in table 2. 5598 SoMe content shared in PDF format included articles from online journals, blogs, Twitter updates, webinars, webcasts, podcasts, case studies, case discussions Images in Nephrology. 2500 Powerpoint slides in PDF format with corresponding audio mp3 file were of grand rounds video, webinar lectures, and presentation from major nephrology educational sites. 180 cases discussed were mainly by practicing nephrologist members who needed help in managing their cases and immediate response obtained to all their posts. Help was also provided by intimating the details of labs that provide special service and medicines availability. A total of 1385 announcements were made with special regard to the information on conferences the publications of individuals and reminders posted on the meetings. Many professors shared links for special articles of interest to group members and a total of 1800 links were shared by group members. The study survey was conducted by researchers and a total of 175 such surveys were conducted

Table 2: showing content sharing details, SoMe-social media contents WA-whatsapp, SS-study survey.

SoMe content	2015-2021	2016-2021	2017-2021	2019-2021	Total 2015-2021
Social media content					
Video file Barcoded file	N = 750 N = 550	N = 550 N = 250	N = 300 N = 10	N = 225 Nil	N = 750 N = 550
Audio files	N = 2895	N = 1875	N = 1660	N = 780	N = 2895
PDF file	N = 5425	N = 4567	N = 3089	N = 3010	N = 5425
PPT as PDF file	N =2550	N = 1550	N = 1100	N = 1200	N = 2550
Journal Articles	N = 26700	N = 18900	N = 16000	N = 9900	N = 26700
Case Discussion	N = 182	N = 102	N = 89	N = 65	N = 182
Social messages	N = 1200	N = 878	N = 978	N = 1800	N = 1200
Announcements	N = 1365	N = 980	N = 770	N = 800	N = 1365
Others	N = 986	N = 750	N = 650	N = 554	N = 986
Links Shared	N = 1800	N = 1020	N = 960	N = 780	N = 1800
Campaigns/ SS	N = 300	N = 130	N = 96	N = 76	N = 300
Forced to delete contents	N = 65	N = 35	N = 12	N = 8	N = 65
View analytics Website ckdregistry.com WA group views	- 60%	1200per/mo 82%	8900 per/mo 89%	- 92%	
Cost Incurred					350-500 USD permo
Storage data 1) Downloaded Contents 2) Shared content	3TB 375GB	2TBGb 201GB	980 GB 185GB	1.1TB 96GB	

by members. Campaigns included members contesting for elections that were discouraged by other members too. Most of the posts that were requested or forced to be deleted included direct patient information with their images, wishes, and greetings forwarded from the unknown source not related to nephrology and unwanted publicity by drug companies. Over 6 yrs total downloads data volume was 3 TB and the volume of content created and shared amounted to 375 GB. Time spent on downloading editing and creating educative material averaged half to one hour per day and the average time spent to download articles and videos ranged from 30min to 2 hrs per day in some cases.

Average viewership as per web site ckdregistry.com analytic data was 1200-8765 per month. The subscription of web servers was discontinued due to the need for increased server space and non-affordability. Out of the total of 1018 members who are currently members a total of 38 members left the group for reasons such as death, change of mobile number, not interested, change of workplace or leaving abroad disconnecting their local mobile number, 12 members re-joined with new numbers. All members were included in the group only by reference from other members. 3 professors and 4 teaching faculty nephrologists were included in multiple groups for their interaction with various members. QR code usage was discontinued once the dedicated server was put to disuse and this was mainly used to share links in a PPT presentation as shown in figure 1.
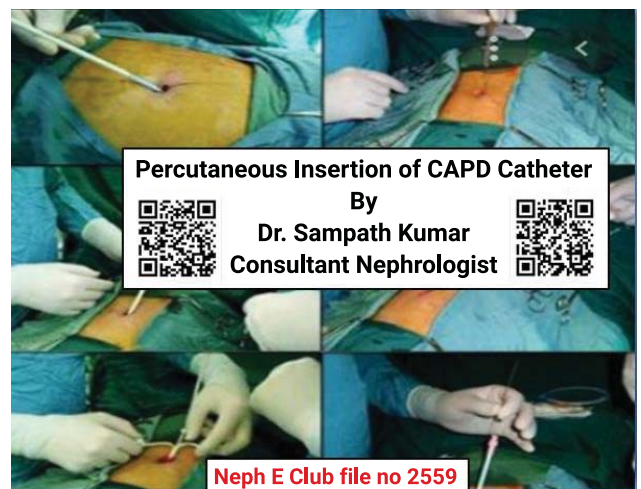
Figure 1 Shows a CAPD catheter insertion by a Member of the group with two QR code one full length other edited 8 Minute segment.

DISCUSSION

In the present study, WhatsApp platform fared superior to other social media platform and was able to break the barrier in participation towards achieving the goal of life-long learning and continuous education in nephrology. Joel MT, et al. [8] in their seven year study experience on using social media education titled NephMadness model reached more than 53 countries with more than 1700 participants

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wherein barrier to participation was the presence of two disparate websites that mandates participants to register and fill out their bracket we found similar difficulties while using Twitter, YouTube, dedicated server, email for education and learning.

WhatsApp platform education method found acceptance for its easy access, cost-effective two-way communication, and presence of known teaching faculty. Kenar DJ, et al. [9] in their study observed that WhatsApp had the strength of overall positive experience of both faculty and fellows and was found to be the easy and inexpensive tool to augment nephrology learning. In the present study, the number of the members joining the group increased from 48 in 2015 to 1018 as of Jun 2021 which achieved the goal.

Christine Greenhouse, et al. [10] describes content creation and sharing as part of defining features of social media success. Various digital content created and shared in nephrology education includes blogs, visual abstracts, and various slides and presentation posters. The SoMe contents are then shared on social media platform like Twitter under a hash tag. Ability to attract many followers or subscribers or participants then determines their success. In the present study, content was created for the sole purpose of education and sharing that focused on updating as to what is happening in field of nephrology to focused nephrologist group.

Internet carries ocean of information and a busy nephrologist, especially those practicing in remote areas with paucity of time to access web find it difficult. Apart from trying to remember hundreds of web site addresses, downloading their contents are also time consuming and expensive. Storage and segregation of downloaded contents for future retrieval is another daunting task for a busy nephrologist. In the present model this barrier was breached and content shared on daily basis was key to success. QR code type content sharing is widely used by social media educators to share their educational contents as a link [11]. Various types of QR codes links which were created for benefit of students and nephrologist was well appreciated yet many senior nephrologist had difficulty in using QR code app. Certain important lectures like POCUS and Intervention in nephrology that requires video clips to be shown this is ideal method which was widely used as shown in figure 1.

Social media administrators (admin) role is crucial in this model of education. Apart from using social media to share information with nephrologist, administrators should show instructional leadership making use of social media effective [12]. In this study the admin were able to moderate the social media content and able to reach fellow nephrologist to make them free to take part. It was also made sure that medical rules and ethics are not violated and important guidelines on sharing of patient information were strictly monitored to avoid future legal issues. In present study number of nephrologist members who were

removed from the group was less than 1 percent and those who left the group less than five percent a major indication as how they were able to adapt. This contrasts with Twitter or other open-access blog sites wherein the administrator has no control to know who are posting their content and authenticity of information are also in question.

In the present study a total of 3TB data downloaded nephrology educative content was converted into social media content of 800 GB. Which also brings into focus need for storage and saving files in a format that is easy to retrieve for reference for offline leisure learning.

Offline condensed storage of data is another unique scoring point that many nephrologist feel comfortable. This bypasses difficulties one face with certain websites where if one has to retrace a previously part viewed webinar or lecture it becomes tedious to connect again from where it was disconnected. Offline viewing also provides time to analyse certain busy slides and makes learning more effective.

In our study though other type of educational model fell through for recurring cost as major reason apart from members preferring offline learning. Discontinuation of services is sometime has negative impact as seen with the YouTube channel of Hussein Sheashaa (https://www.YouTube.com/user/HusseinSheashaa/videos) which was a favourite in Egypt. The channel would garner around 7500 views. This channel was suddenly suspended after demise of Prof Hussein Sheashaa, who was described by ISN as leader in nephrology e-education. This brings into focus the need for training nephrologist in various modes of social media content creation and recognise it in various nationa, international or regional society for maintaining continuity of education.

Use of dedicated server is successful model suited for major societies or institutions as they have adequate funds to subscribe to servers. Favourite among this model is https://hdcn.com that is in existence for more than 10 years and has free as well as paid zone nephrology educational content.

Subscribing to multiple channels is unaffordable to many nephrologist in low middle-income countries. Thus there is increase demand for free open access educational content [12,13]. In the present Neph E Club group, there are many social media trained nephrologists as members who take an active part in promoting and advancing their objective. Their contribution in sharing Twitter links especially during major events like ASN Kidney week or ISN WCN or generating online quiz kept learning interest alive.

Offline and computer-based e-learning is an important mode of learning and is widely recommended by WHO in the training of doctors in Low middle income countries. Educational content can be delivered via videoconferencing, emails, and audiovisual learning material; and kept in

either magnetic storage (floppy discs), optical storage (CD/DVD), flash memory, multimedia cards, external hard discs or information pre-downloaded from a networked connection, as long as the learning activities do not rely on this connection Rasmussen K, et al. [14,15].

The downloaded content and content created doubled up as dynamic digital library wherein people who were interested to get articles had an opportunity to either download them from the dedicated website ckdregistry.com or request materials which were transferred through the various application that included the telegram app or directly copied to USB disk and couriered. Many members also offered drop box access to their institutional library textbooks namely Prof and Head of Department of Christian Medical College Vellore.

Learning and training analytics are fundamental tools towards improving practitioner's engagement and workplace productivity. With Learning Analytics, it is possible to aggregate learners activities and view them as comprehensible forms giving timely feedback to learners is considered as one of the most important ways to empower the learning experience [16-19]. In this present Neph E Club model, the analysis was done using the embedded analytics in WhatsApp and ckdregistry.com.

An educational content that had only 40 to 50 views in the YouTube web site generated 980 views when the same was shared in WhatsApp group. Weekend viewership crossed 1200 per day and combined monthly viewership was around 12000.

Compared to other platform the cost incurred to maintain the Neph E Club educational model costs on average 500 USD per month.

CONCLUSION

Neph E Club an integrated social media educational model was a successful model that could update and satisfies all the key aspects of social media education to achieve the goal of lifelong learning and also influence diverse areas of medicine including research, education, social support, and activism.

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