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Review Article

A Proposal of Revised Curriculum to Circumvent the Impact of COVID Restrictions on Final Year Medical Students

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Abstract

Medical education has been extraordinarily disrupted during the COVID-19 era worldwide. The pandemic limited routine ward or patient-based medical education. These limitations have resulted in new challenges for medical students, especially the final year students in completing their mandated curriculum. We are suggesting a revised curriculum for final year medical students, by following which we can address COVID restriction while making sure all competencies have been achieved by students. This revised curriculum centers around the usual placement of students in Surgical Assessment Unit (SAU), however all students will be posted in simulation wards/labs on their turn to enhance and consolidate their understanding and learning of common surgical cases in these wards, so that they can replicate these skills in SAU and wards on their turns. This article highlights how the proposed curriculum addresses the learning needs of final year medical students in their surgery rotation. The article will also summarize the critical

appraisal process of our curriculum in the context of curriculum design theories. Finally, the article will highlight the quality assurance measures adhered to while developing the curriculum.

Keywords:
COVID-19; medical education; curriculum; residency; surgery

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Introduction

A curriculum is defined as a complete framework which deals with managerial, planning, organisational aspects of a course or program, its assessment processes and addresses the needs of students comprehensively, including their support, personal and professional development [1]. It also explains the expectations of the trainers/teachers and their defined teaching/supportive roles [2]. Societal demands and expectations are looked after by keeping in view societal needs and norms while defining curriculum. Society as a whole is reassured that institutions are responsibly producing the next generation of doctors according to their needs and norms [3].

Medical education has been extraordinarily disrupted during the COVID-19 era worldwide including routine ward posting and patient-based medical education [4]. In these circumstances we are proposing a revised curriculum with teaching in imitation wards, for final year medical students, where actors will play the role of patients of specified diseases and student will take history and manage them under supervision. It is expected that students will extrapolate and apply this knowledge when seeing the original patients in the ward, reducing their time to see patients as they have already learned about these cases. This will allow students to see more patients in less time with more confidence and completely cover the required number of cases mandated in their original curriculum.

In our revised curriculum, through our imitation wards, we will deliver imitation ward-based teaching while remaining fully compliant with COVID-19 safety protocols. Simulation labs will allow students to complete the mandatory component of their surgical theatres' placement, since long simulation is well recognised way of learning [5]

This article hypothesizing that utilization of imitation wards and simulation labs will enhance the understanding and learning of final year medical students when they are lacking direct patient contact in the real wards and theatres. Utilization of 'simulation learning' has been successfully proven in medical education for long time [6]. This Hypothesis has been successfully proven correct in other parts of the world [7]. In COVID times therefore we want to replicate this experience to address COVID restrictions and enhance learning in our institutions in these difficult times.

The Learning Needs Assessment

In curriculum design, a learning needs assessment identifies the factors that allow students to progress in their learning. Adult learners, such as medical students, can pinpoint appropriately what are their learning needs, if guided correctly [8]. There are several ways to classify the factors conducive for learning. “Felt needs” describe the needs that students, teachers, or institutions, feel are important in their education. “Felt needs” however may not align with “normative needs”, or what experts believe are important in education. Meanwhile, needs that are expressed by students in a questionnaire are called “expressed needs” [9]. Needs assessment may also be categorized into ‘individual versus organisational needs, clinical versus administrative needs, and subjective versus objective needs’ [10].

Medical education curriculum is competency-based. Therefore, it is expected that this curriculum will produce graduates who are competent in specific areas. As such, a learning needs assessment of our proposed curriculum will focus on its ability to meet specified surgical competencies. The most widely used needs assessment techniques are expert opinions and ‘consensus-based’ approaches. However, their validity in the era of ever-changing frontiers of medicine and development of further subspecialty disciplines has yet to be ascertained [9]. A needs assessment can also be done by using the following objective methods [10]. Observations, Trainee’s perceptions, Reflective diaries, Patient feedback, Comparison with peers, Critical incidents, Audits, Document analyses, structured interviews, Surveys, and Workplace-based assessments. In general surgery, for example, an objective needs assessment may be conducted by assessing student/trainee Logbook/workplace-based assessments and comparing them with ISCP standards [11]. While this method can readily assess a trainee’s performance, it is less likely to accurately assess the curriculum’s ability to fulfill learning needs [10].

While designing our curriculum, we used a combination of felt, normative, and objective methodologies to perform the learning needs assessment. Prior to the COVID-19 pandemic, students were assigned to the surgical ward/theatre for 12 weeks. This could be their last mandatory placement before they become Foundation Year 1 doctors (FY1). Therefore, they are expected to see and a certain number of essential surgical cases and learn different practical skills, so that they are fully prepared to take the FY1 role. Since the emergence of COVID, social distancing protocols made it impossible to bring all the medical students into the surgical wards/theatre in big numbers or group as they used to come.

Before we could have collected formal feedback [9]. In our hospital we have noticed during COVID times that students are not spending enough time with patients, which can help them in formulating good knowledge base of learning because of COVID restrictions as they were attending wards only for 4 hours shifts on their turns, this observation was confirmed by students verbally. This observation acted as an impetus to suggest/propose changes in the curriculum rather than in the timetable.

The Critical Appraisal

To verify informal observational needs assessment, one need to perform a critical appraisal of existing curriculum. We are proposing to utilize Grant’s (2014) (10) model to perform this appraisal.

Character of the Course

In this step, one need to identify the problem and analyse the assessment of needs. Like in our case, consultant observation and students’ feedback has indicated that their clinical experience is not adequate. The original curriculum demands that students must learn a set number of cases. One way to address the problem is to change the timetable. However, this approach to the problem as we found was not ideal/appropriate to resolve it. Therefore, needs assessment has established 'the need' for change in curriculum implementation.

Specific Intended Achievements

Intended learning objectives (ILO) in our proposed amended curriculum, to teach students cases which could be missed in normal wards, are the same as in the original curriculum. Once students have learned these cases in the imitation wards they can replicate their experience on original patients and apply their high-level thinking, to formulate a lifelong learning experience [12]. We are suggesting to keep key surgical cases in the revised curriculum from the original curriculum so that both curricula have a communicational relationship [13].

Longitudinal integrated clerkship programme (LICP) curriculum, provides 'continuity across learning environments and experiences' [14] and it is longitudinal learning contact with teachers/patients/colleagues and institutions [15]. Students are encouraged to follow the whole journey of the patients rather than treating them as one-off episodic care and develop a relationship with them until they are discharged [16, 17], in contrast to the prototypical structure, where students are assigned one teacher for one core subject [18]. Therefore, students need to integrate anatomy/physiology with clinical pathology-(vertical-integration) in imitation-wards/simulation-lab to strengthen their learning and extrapolate that learning in real wards to follow LICP ladder as they are expected to do in pre-COVID times.

In the proposed imitation wards, students will have access to a full teaching faculty, who are available to teach. There may be students who may not take interest in this imitation learning and consequently may miss out in developing high level of learning. By keeping checks, it can be prevented to happen.

Our informal as well as formal learning needs assessment highlighted the lack of patient contact that could materialise into a high-level learning experience, as well as a lack of hands-on practice and confidence in their abilities to repeat these skills. As such, the concept of an imitation ward was developed. In this arrangement, actors will take on the role of surgical patients that medical students can interview/take history from. Simulations lab exercises will help students to practice important surgical skills.

The most important limitation of the imitation ward is that real patients are missing. Learning in the imitation ward may potentially hinder students' natural development and innovativeness [19]. However, doctors do learn constantly from/through colleagues, patients, educational events, reflections and feedbacks while on the job [19],[20],[21].

Educational Experiences

In the imitation ward, students will consolidate their knowledge through experience, developing an individual learning experience as mentioned in the constructivist model [22]. Although group learning will happen in imitation-wards, it is expected that students will individually achieve the competencies needed at the end of their placement as it is outcome-based teaching [23] and the best results can only be achieved by the combined efforts of preceptor and student, as they share responsibilities [23].

Once the imitation ward teaching is complete, observational questionnaires will be filled by faculty, to deliberate whether or not students have achieved proficiency in history taking, examination, investigations and the management plan. Students will go through CBD/Mini CEX discussion, assessments for practical skills, DOPS will be done on students' online system like Minera or others whichever is available locally.

Curriculum Evaluation Plan

To determine if the purpose of the curriculum has been achieved or not, combinations of assessment tools to assess different levels of learning have been utilized. Learning is a complex process that involves assessments, student reflections, and a learning environment to produce high-level learning and changes in students learning behaviour [24, 25]. Students reflections will be used to assess the preceptor's capacity to impart knowledge and students' ability to construct knowledge. If the reflective processes [26] indicate otherwise, changes in the shape of further preceptors' training, support and extra resources should be brought in. Direct Observation of Procedural Skills (DOPS), Mini-Clinical Evaluation Exercise (mini-CEX) and Case-based discussion (CBD) will assess student knowledge and performance [27].

Quality Framework

Quality in medical education is a broad-based framework that includes 'governance, the learning environment, social accountability, the learning outcomes, the teaching and learning methods, assessment, and continuing professional development [28]. For example, when teachers look at the standards of quality, they look at the practice of teaching and the environment that produces high-level learning [28]. While students look at the best standards of quality, they determine if they have learned what they were supposed to learn, which is demonstrated when they feel they are prepared to take their examinations and able to work as competent doctors [29]. Similarly, institutions evaluate their ability to profitably fulfil all criteria of external accreditations, standards of quality for hospitals and the community [28]. In higher education quality assurance describes the practice by which academic standards have been achieved, maintained and goes through a continuous process of improvement [30]. Standards of high quality in higher education

are described as 'achieved' when students' outcome demonstrate they have attained specific high levels of knowledge and skills by working through a specific educational program [30].

In the UK, all medical schools submit quality assurance data through self-reviews, external and internal reports to the Graduate Medical Council (GMC 2021). According to the GMC, 'organisations----must take account of the views of learners, educators ---This is particularly important when services are being redesigned'. We are suggesting one must consider this regulation by listening to the views of the students/ preceptors' feedback while designing their revised curriculum based on our proposed template. The GMC also stipulates that 'educators receive the support/resources and time to meet their educational ---responsibilities'. In our revised curriculum we are proposing, whoever wants to use our model, must make sure all preceptors have slotted times for teaching in the imitation ward, where support to the faculty needed should be arranged to maintain and improve high standards of education.

Quality Enhancement

According to Harvey 2007, quality enhancement (QE) is "a process of augmentation or improvement, enhancing learners 'attributes, knowledge, ability, skills and potential, as well as improvement in the quality of an institution or program of study."

If an inadequate students' feedback comes from any institutions, because of COVID restricted teaching is happening in them, then quality responsibilities of that institution are not fulfilled. Therefore, to address this problem, the curriculum needs amendments, like one of the models/templates we are proposing to uplift quality in COVID times.

Conclusion

In these COVID time we need to think laterally to imparting education and use the technology assistance and new ways of learning so that whole idea of being educated should materialise as it used to be before COVID. We have suggested/proposed amendments in curriculum, without disturbing the basic philosophy of it, to make sure it can be implemented as it was intended for the benefits of students, institutions and society at large. The success of any curriculum amendments/design **not only** depends on validated needs assessment, adhering to the main principles of the curriculum framework, application of validated quality assurance and enhancement process, **but** also all these elements are aligned with each other correctly so that the outcome of this whole exercise produces competent doctors as expected, therefore we have discussed all these relevant principles in the context of our proposed revised curriculum as well.

Competing Interests

No commercial or any other contribution from any companies

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