

Remedial Education in Medical Colleges

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Introduction :

Remedial Education is a multifaceted approach, tailoring remedial intervention plans to a student's specific needs. Remedial therapy focuses on skills rather than on content. It is offered to students who need (pedagogical/didactic) assistance. It differs from special education which is designed specifically for students with special needs. Remedial education can be designed for any students, with or without special needs; the defining trait is simply that, they have reached a point of under preparedness, regardless of why. The bulk of remedial, courses focus on advancing under prepared students' literacy skills (English and reading) or mathematics skills.^[1,2] These skills include visual discrimination, perceptual organization, sequencing, abstract reasoning, auditory processing, sound recognition, blending, mathematical operations, focusing and eye tracking. However, remedial courses can also be offered for other subjects such as science or study skills.

Underperformance among undergraduates, in medical schools is not well established or defined; yet the identification and remediation of physicians, who are not performing up to acceptable standards is central to quality care and patient safety. Though many colleges have published studies relating, admissions criteria with student academic achievement in pharmacy school^[3-8], little evidence of support schemes available to medical students following examinations, exists.

This article is a concept paper on remedial education for medical college students and does not discuss the students' admission criteria and student demographics relating to academic achievement, as this is a policy of government. To characterize policies of medical schools regarding struggling medical students, those at risk of receiving a grade of less than pass because of problems with knowledge, clinical skills, professionalism or a combination of these items can be another area of discussion.

Evidence shows that six to fifteen percent of health professions students experience academic difficulties and these percentages are increasing.^[9, 10] Poor academic performance and scholastic failure can result in student's dropping out of professional programs while still responsible for the large debts incurred. Although most faculty members feel a sense of commitment to helping their students succeed, some feel that academic progression is the student's responsibility and that faculty members should not have to remediate students at the graduate or professional level. As an example in this paper, I aimed to explore the perceptions of students support. I recently undertook a focus group discussion (FGD) with undergraduate medical students in their 2nd professional course, who had failed a summative examination. Non academic problems contributing to low performance included; language problem as most of them had their schooling in a medium other than English, problems in adjustment to life outside home, lack of self confidence, lack of mentor support, personal health problems and problems with intake of healthy diet.

Academic problems included; difficulty in managing study time, inability to retain what is studied, inability to pick out what is important in the text, difficulty in coping with the large amount of content to be learnt, spending too much time on cell phones and social media sites, lack of motivation to study, not knowing how much to write and what to write in exams, need for guidance regarding text books.

The learning needs as identified by the participants included; a revision class- say, of two to four hours duration, an extra revision exam before the summative examination, a practice on exam question writing skills, peer support and need for mentorship to improve learning. However, the example quoted above on perception of participants of one FGD may not represent worldwide view of the issue. Some of the other problems as identified in a

study by Mysorekar^[11] include; lack of concentration, examination anxiety, inability to plan study, improper sleep and lack of motivation. Academic failure among undergraduate medical students is due to a variety of academic and non academic problems. And it is seen that these students do not perform as expected and it is also expected that students study the core areas well to be certified as pass.

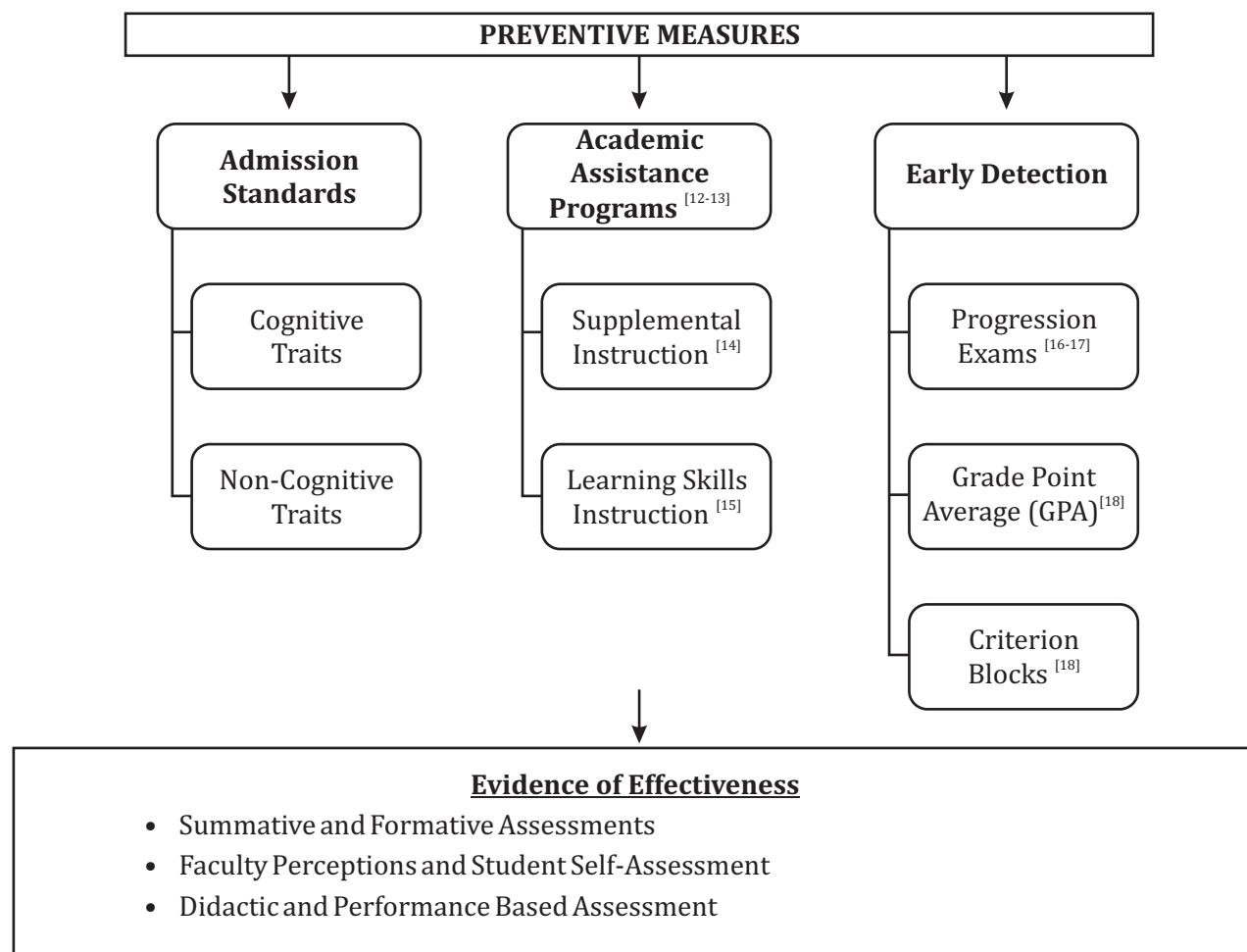
In addition to identifying students who are not progressing, medical colleges and schools can devise preventive strategies/ measures in form of remediation. Educational remediation is the act of providing a remedy to a problem or a process. Accreditation standards and guidelines for medical schools must have a remediation policy. Modifications in the curriculum and teachers' approach can help low performers improve their performance, confidence and self esteem and sustain their motivation. Effective remediation policies should include early detection of problems in

academic performance, strategies to help students develop better approaches for academic success and facilitation of self directed learning.

COURSE DELIVERY: There can be an active debate on course delivery. Researchers continue to investigate and make recommendations for effective remedial education models. Remedial education courses can be delivered in many ways. Two main areas for formulation and evaluation of remediation plan for medical schools can be:

- (A) Preventive strategies to minimize the need for remediation and
 - (B) Remediation approaches to correct deficiencies
- (A) Common preventive strategies to minimize the need for remediation are summarized below (Figure1):**

Figure 1: Preventive strategies to minimize the need for remediation



(a) Admission standards: One strategy for minimizing the need for remediation is to admit only the most highly qualified students to a medical school. Characteristics that are accurate predictors of a student's success in the program include cognitive and non-cognitive traits. Cognitive traits should be assessed in form of college admission tests and non-cognitive traits, to test motivation, professionalism, responsibility and others. As stated earlier, this paper does not mainly discuss the students' admission criteria and student demographics relating to academic achievement, as this is a policy of government. But it is seen that large number of students (200-250) are admitted in a batch in medical colleges due to demand for more doctors, this compromises the quality of teaching by reducing focus on students. However some questions to ponder at this point of time are, "Are students selected on the basis of merit from a large cohort applying for admission in need of remedial education? Can an orientation / counseling session before seeking admission for students and parents regarding the academic load and other demands/ responsibilities minimize the need and number requiring remedial support?"

(b) Assistance Programs emphasizing either; correcting deficits to make more effective learners or; teaching content- specific skills and strategies. Academic assistance is often required at transition points from high school to undergraduate training and from undergraduate to graduate or professional. These programs attempt to develop confident and motivated learners who can concentrate, manage their time, set goals, synthesize information from multiple sources, solve problems, develop strategies for studying and test taking and perform self assessment of their learning.^[12,13]

Some of the ways in which assistance programs can be delivered are:

1. Supplemental instruction: is a proactive support system developed to increase the academic success of students at the point of trouble instead of waiting until the end of the semester when it is too late. It is basically proactive remediation. The supplemental instruction sessions do not re-teach course material, but emphasize thinking, reasoning, analyzing,

organizing, problem solving and practical application of ideas.^[14]

2. Learning skill Instruction: In a proactive effort to avoid difficulties arising from suboptimal learning and study habits, some professional schools can institute programs to develop learning skills such as a week-long orientation course that introduces them to the demands of the program and its approaches to learning like the foundation course as proposed by Medical Council of India (MCI) Vision 2015.^[15]

(c) Early Detection:

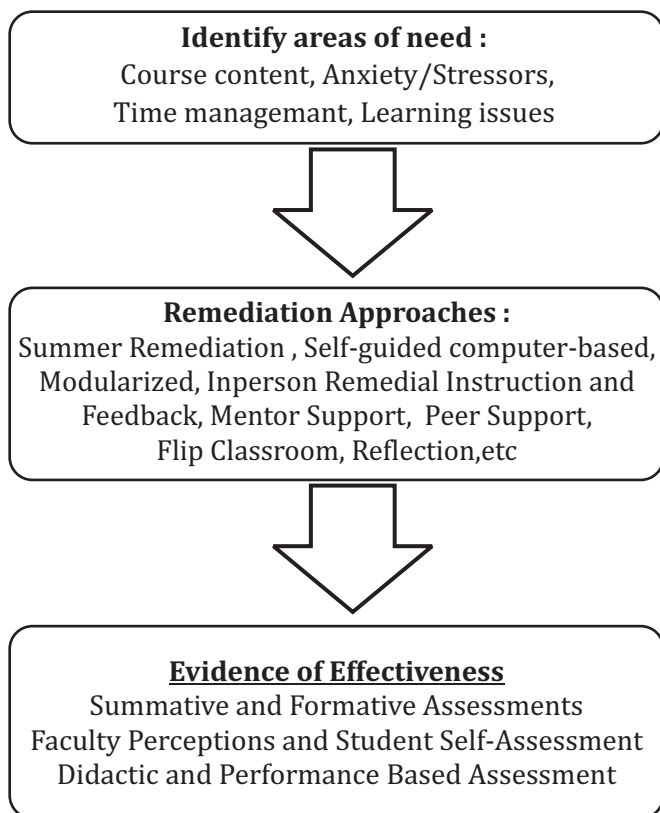
(I) Mile Marker or Progression Examinations : The early detection of potential problems is essential for introducing timely interventions that may circumvent future remediation efforts. In addition to course grades, progress examinations are being increasingly employed as an assessment tool to measure knowledge and skills and can affect a student's progression in a program. Progression examinations can be utilized in a variety of ways in an assessment program. Some examples are: benchmarking results of year-end examinations in comparison to other schools in the nation, determining progress, and (most relevant to the present article) identifying students who would benefit from remediation.^[16,17]

(II) Other early detection strategies : implemented by colleges and schools of pharmacy include grade point-average (GPA) alerts and criterion blocks within a course. Although no comparative studies exist with regard to the effectiveness of these strategies, they represent logical approaches to early detection of students who are at risk for remediation. Several colleges and schools of pharmacy have GPA alert points that are different from the minimal GPA necessary to progress. For example, a school may require a minimum GPA of 2.2 to progress, but students receiving a GPA under 2.5 are sent to academic advising and counseling to address issues and circumvent major problems before they occur. The progression policy at the Pacific University of Oregon School of Pharmacy incorporates a modified block curriculum with a pass/no pass criterion for each block. A student scoring less than 90% on any

biweekly examination on Fridays must return the following Monday for reexamination. One consequence of this policy is that students who are in trouble are identified quickly.^[18]

(B) Remediation approaches to correct deficiencies (Figure2)

Figure 2 : Remediation approaches to correct deficiencies



1. Summer remediation course/ Coaching Classes : for example a web based summer remediation course for medical students who have received a failing grade during their initial course in medical microanatomy is offered by Dr. Janet Smith and Haviva Goldman.^[19] These courses can include: readings, assignments, practice problems, discussions, self-study of course materials.

2. Modularized courses that target particularly student skill.

3. Self guided computer- based courses that adapt to student skill deficiencies.

4. In person remedial instruction and regular feedback. Feedback also from the students honestly

accepted by the teacher would reduce the areas not well understood by students, thereby need of remedial action.

5. Mentor support : Faculty members who are empathetic can provide good mentor support to low performers.

6. Peer interactions and group study may help to increase the efficacy of student study in preparation for examinations and encourage practice of behaviors conducive to a career as a health professional.^[20]

7. Flip classroom : Flipped classroom simply means inverted classroom where students seek information before and not after the class (like traditional class) and come to the class well prepared to share together in an interactive learning process rather than a spoon fed teaching session.^[21] For remediation the information can be provided on core skills.

8. Reflection : Reflection is a meta-cognitive process that creates a greater understanding of both the self and the situation so that future actions can be informed by this understanding. Self-regulated and lifelong learning have reflection as an essential aspect, and it is also required to develop both a therapeutic relationship and professional expertise.^[22] There are a variety of educational approaches in undergraduate, postgraduate and continuing medical education that can be used to facilitate reflection, from text based reflective journals and critical incident reports to the creative use of digital media and story telling. The choice of approach varies with the intended outcomes, but it should also be determined by the user since everyone has a preferred style. Guided reflection, with supportive challenge from a mentor or facilitator, is important so that underlying assumptions can be challenged and new perspectives considered. Feedback also has an important role to enhance reflection.

It is important to note/speculate that if such students need remediation it probably reflects more on education system than on them. It also raises the issue of, "How prepared is a person, with MD in a discipline, as a teacher? A good clinician/ consultant

may not be a good teacher. Other questions to ponder are, "Is there a relationship between students not attending classes regularly/attending but not mentally present and therefore a need for remedial action? Are assessments at examination fair? Are students really in need of remedial action or more importantly, are there many more who need remedial action but are missed by system which passes 85%-90% by lowering expectations from students?"

Duration and Structure: Remedial classes are not necessarily semester or quarter length classes. Some institutions offer crash courses over a few days or weeks in order to bring students up to speed quickly. These classes usually have tests and homework like any other, often with a focus on review to ensure comprehension by students. Most remedial classes stress basic concepts (must to know) that must be understood before complicated ideas can be applied. In Community Medicine, for example, teachers can/might stress on epidemiology of priority health problems of India. By getting these concepts firmly in hand, students can better focus on learning complex applications of them like prevention and control.

Remedial teaching can be given for a period of 6 weeks to 3 months, once or twice a week at school or in the remedial teacher's own practice.

Classes are often small with a focus on high teacher student interaction and can take place at a time feasible to the student and the teacher, and also to accommodate various needs of the students. In the course of the class, the teacher will bring students up to speed so that they have skills comparable to those of their peers.

Any student required to take remedial classes should not feel ashamed. These classes can be conducted by discontinuing system of "Casual Batch" and allowing them to be with the regular batches, this might help. These courses only help students gain a better understanding of a particular subject. By reviewing and focusing on the basics, students become better prepared to keep up with the advanced course/ classes. Remedial courses can also teach students better study and learning habits, to help them succeed where they might have otherwise found difficulty. In remedial education students are

usually given assessments to determine their level of competency and can be enhanced through student and faculty feedback.

Effectiveness : The question that rises is whether successful completion of a remedial course guarantees student's success in college. The literature provides limited evidence for the effectiveness of remedial courses on outcomes such as persistence to graduation, quality of performance in subsequent courses and grade point average.

SUCCESS FACTORS : Kozeracki (2002)^[23] distinguishes seven commonly cited elements that are associated with student success in developmental programmes: 1. Orientation, , and placement are mandatory for new students, 2. Clearly specified goals and objectives are established for courses and programmes, 3. The adult learning theory is applied in the design and delivery of the courses, 4. The courses are highly structured, 5. The programme is centralized or highly coordinated, 6. Counseling, , and supplemental instruction components are included, 7. The social and emotional development of the students is taken into consideration.

Other research suggests that "bridge" programs that integrate basic skills and remedial education with higher-level content or technical training can produce substantially better results than traditional remedial programs.^[24]

Conclusion and Future Directions : To conclude, an optimal system of remediation begins with prevention. Effective remediation policies should strive to identify students early (first 1-2 years) in their medical career, use proactive strategies to help students develop better approaches to academic success, and combine academic counseling and mentoring to facilitate self-directed learning. Several observations/statements made and questions raised in this article need additional research on remediation in medical schools and health care education across India and abroad, in order to make sound decisions in developing effective policies.

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