**Title: Delivering Disability competencies of MCI’s revised competency based curriculum at a medical university in North Karnataka**

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**Introduction:** World Health Organization [WHO] defines disability as an umbrella term covering impairments, activity limitations, and participation restrictions [1]. In India out of 121 crore population about 2.68 crore persons are disabled which is 2.21% of total population. According to 2011 census 20.3% of people with disabilities in India have movement disabilities, 18.9% have hearing impairments and 18.8% have visual impairments. This is a huge burden which needs special attention and care by treating physicians [2].

Ramdass et al [2018] recommended uniform scoring systems to standardize the comparisons over time and between different geographic contexts in the measurement of disability and quality of life and in their data collection methods [3].People with disabilities [PWD] are vulnerable for discrimination in their social, occupational, medical and educational needs. So to protect the rights of PWD, the Convention on the Rights of Persons with Disabilities was passed in 2006 and came into force in 2008 [4]. The convention recognizes disability as the consequence of the interaction of the PWD with an environment that does not accommodate that individual’s differences. Human rights approach to disability recognizes the attitudinal and environmental barriers as discriminatory, and places a responsibility on the State to ensure that such discriminatory barriers are removed. India is one of the several countries that has ratified with the convention and so has passed the Rights of People with Disabilities [RPWD] Act in 2016 which includes 21 conditions defined as disability [5]. Math et al observed the challenges in implementation of RPWD act when applied to Persons with Mental Illness [6].

PWD need a different approach from their physicians in management of their illnesses which makes it difficult for them to find their physicians. Mccoll MA reported that the agency staff of Ontario Health Care Connect program (a government-funded agency) in Ontario Canada, faced significant challenges in helping PWD find a family health care provider[7].

Shakespeare T in an article expresses that PWD have health needs arising from their primary impairment as well as general health needs which are often ignored by their treating physicians who attribute everything to their disabilities [8]. Mccoll MA, Forster D in 2008 observed that healthcare providers expressed concern over interactions with PWD as they were more time-consuming and emotionally draining [9].Hence there is need for training the physicians to treat PWD. Duggan et al. 2011observed that disability stigma and unconscious bias exist also among healthcare providers [10]. There are very few doctors with disabilities who practice medicine. So there is little understanding of the social context resulting in suboptimal medical care for PWD and discrimination. Hence there is a need for inclusion of medical aspirants with disabilities in MBBS program and doctors with disabilities in providing health care respectively [11].The quota of reservation for PWD in medical education has been raised from 3% for 7 categories of disabilities to 5% for 21 categories by the Medical council of India [MCI] in 2017 [12].Even this change is argued as insufficient by Dr Satendra Singh who in his article expresses that there is need to include PWD in the policy forming body of these guidelines [13].

Ohio Disability and Health Program has developed competencies to provide quality care to people with disabilities as quality care depends on the knowledge, skills and values held by health care providers[14].

In a study by Rogers JM and others, while introducing disability and health for preclinical medical students, didactic and panel ddiscussion with PWD were compared [15].

Shakespeare T [2013] reviewed more than 90 different teaching and learning activities in 50 papers for training medical graduates in disability competencies. Forty eight papers concerned specific teaching intervention or evaluation. Among these five related to in-service training and forty three to pre-qualification training. The papers were geographically scattered and were from across the world [16].

Sabatello M. studied inclusivity in precision medicine research focusing on disability, diversity, and cultural competence [17].

In a study by Trollor JN and others, 75% of medical schools studied involved people with intellectual disability designing and teaching content [18].

McClimens A and Scott R 2007 explored forum theatre as a teaching learning method in a nurse’s disability training program [19].

CDC has published stories of people living with disability to take ownership of their own care through “‘Ready Now!’ an emergency preparedness training program developed through the [Oregon Office of Disability and Health](https://www.ohsu.edu/xd/research/centers-institutes/oregon-office-on-disability-and-health/) [20]

Pharr J has discussed the provision of accessible equipment and universal design in healthcare settings for PWD [21].

Though disability competencies have been introduced in medical education curricula across the world, until recently there was no formal training in disability competencies for our MBBS graduates.

There was a change in MCI curriculum for MBBS graduates in 2019 with a shift to competency based curriculum. Curriculum support implementation [CISP] training was given to faculty of medical colleges of India for effective implementation of the ‘drafted’ curriculum of MCI. Initially disability competencies were not introduced in the curriculum or CISP training. However they were introduced in the curriculum just before starting the foundation course in August 2019. The method of delivering the foundation curriculum including disability competencies FC 4.5.1 to 4.5.8 was published in the MCI website [22]. The final version of the competency based curriculum was published as a gazette notification in November 2019 [23].

As there was no formal training of faculty during 1st round of CISP in rolling out disability competencies, as there is little available open access literature regarding the delivery of disability competencies in India and as most of the centers did not have the experience in delivering the disability competencies; we intend to present our center’s experience in implementing FC 4.5.1 TO 4.5.8 of undergraduate medical curriculum and the results we obtained in the foundation course training of our students in this descriptive study.

**Materials & Methodology**: FC 4.5.1 TO 4.5.8 of UG medical curriculum MCI foundation course guidelines were used as resource material. Eight faculty members from the department of general medicine participated in the teaching activities. The teaching learning activities were conducted in the lecture theatre and the college campus.Target audience was first year MBBS students of 2019-2020 batch. Study duration was 1 day. Notes made from delivering disability competencies, photographs, videos and reflections from students were the source of data.Each competency enlisted in the foundation course training material is described with the suggested and actual teaching learning methods [TLM] followed. Institutional ethical committee permission was obtained. Informed consent was not taken as this study is a regular educational activity. Permissions have been taken to publish the photographs of participants.

**Results**

We recognized that the first part of competency FC 4.5.1 applied to knowledge domain while the second part applied to attitude. Hence our teaching learning activity was modified. We conducted FC 4.5.1, FC 4.5.2 and 4.5.4 in one block, followed by FC 4.5.6 in the second block. We then conducted FC 4.5.3 and 4.5.5 for teaching disability etiquettes. We conducted 4.5.8 before 4.5.7 for logistic reasons. The lesson plans for the disability competencies are depicted in tables 1 to 5.

Assessment of FC4.5.1 to 4,5.8: Assessment method is not mentioned in the foundation booklet. So assessment was made by observing participation of students qualitatively. Written Reflections were collected under the headings, ‘what happened’, ‘so what’ and ‘what next.’ Hence reflections were marked on a scale of 1-10 by faculty. Feedback by the students for satisfaction was on a graded scale of 1 to 10, 1 being least impact and 10 being highest impact. Students’ reflection score was an average of 7.78 with all the students crossing a benchmark of 5.Satisfaction score averaged 9.46. Happiness however was immeasurable and palpable in the resounding applause. The duration of this activity was 25 minutes.

**Discussion**: As per the CBME curriculum for MBBS 2019, we conducted the foundation course training during the first month of their entry into MBBS. Disability competencies 4.5.1 to 4.5.8 were a part of foundation course requiring 8 hours of teaching learning activities. MCI foundation course booklet advised multiple methods for teaching learning FC 4.5.1 TO 4.5.8. These competencies belonged to the cognitive and affective domains. The course was directed at large group of beginners for sensitizing them to disability in a short period of time. Hence we modified the TLMs to suit the available time and faculty, number and prior knowledge of learners. Shakespeare T in his review found 33 papers reporting conventional lecture delivered by faculty staff, 15 papers reporting disability curriculum delivered by PWD or their family members, 23 papers reporting patient encounters with or standardized patients, 9 papers reporting visits with community facilities and organizations, 4 reporting simulation exercises, 9 papers reporting clinical experience and 2 papers reporting in-service training. Among these only 3 articles involved 1st year medical students while others were for participants from multiple disciplines ranging from optometrists to midwives spread over days to years of training [16].

Since 4.5.1, 4.5.2 and 4.5.4 were for cognitive or knowledge domain, we used sensitizing lectures of 15 minutes each. To make them interactive, we used an interesting set induction [fig. 1], asked for student narratives of family members with disabilities, created buzz groups for interaction and gave self-directed learning activity using mobile phones. Learners expressed concern over practical difficulties in patient care that may be encountered if medical aspirants with significant disabilities were selected and possible reverse discrimination. In Australia, intellectual disability competencies are taught as lectures for compulsory rotations and workshops and tutorials for elective postings [18].

Health care seeking practices and availability of appropriate healthcare for PWD are influenced by stigma. So disability competencies are also cultural competencies. Stigma can be abolished if the stigmatized states that it is not acceptable and an individual who stigmatizes realizes that it is unfair. The disability competency 4.5.6 relates to nondiscriminatory behavior. We used the forum theatre to deliver this competency [fig2a and fig 2b]. The forum theatre is a strong technique to learn nondiscriminatory behavior due to active change in the behavior demonstrated by the students when they re-enact a discriminatory scene. Videos were available for facilitators training [24]. McCliemens 2007 studied this technique in educating nurses to care for children with learning disabilities [19].

The MCI competencies 4.5.3, 4.5.5 for the role of communicator were of affective domain. The recommended TLMs were clinical patient encounters or standardized patients. Since all of our disability competencies were to be completed in a day, we opted for role-plays. A facilitator played a deaf patient and two others interacted with her in a role play demonstrating unacceptable and acceptable disability etiquettes. They also demonstrated nonverbal respectful communication skills. Effective communication is a core competency in providing health care to PWD. The physician and patient should understand one another’s language. The physician’s mode of communication should accommodate whatever hearing, visual, auditory, or cognitive impairment the patient might have. A culturally competent physician will inquire the mode of communication preferred [11, 14].Some learners expressed concern over adapting American Sign Language or Pidgin sign language or even Indian sign language as a source for communicating as ours is a multilinguistic country and health communication is sometimes in the form of vernacular phrases and idioms. Evolving disability competencies also needs evolution of multilinguistic sign languages.

The motto “Nothing about us without us” was legally framed in articles relating to implementation and monitoring of the CRPD. According to this no policy regarding PWD should be decided by any representative without the full and direct participation of PWD. So PWD should be a part of disability curriculum in its design, delivery and monitoring. The foundation course curriculum for disability competencies essentially recognizes this principle. As a part of this principle we involved two staff members with motor disabilities to deliver FC 4.5.8. MCI suggested a blog or self-reflection as TLM. An interview of staff with disabilities by our students was conducted. The staff members received prior training but the students did the interviewing extempore. There were instances of biased views of the students at the outset which eased into a flow of simple enquiry and learning due to a mature and open handling of the views by our staff.

While introducing disability and health for preclinical medical students, didactic lectures and panel discussion with PWD were compared in a study by Rogers JM and others. The curriculum was designed with significant input from people with disabilities and was constructed from their perspective [15]. Even though 75% of medical schools participating in another study involved people with intellectual disability designing and teaching content related to disability; the challenges faced in designing the curriculum were not discussed [18].

The competency 4.5.7 refers to universal design. Access, in the setting of disability refers to problems in infrastructure of the health care centre, geographic distribution of providers, their expertise in handling PWD and stigma that acts as obstacle to access or equity.Healthcare providers and administrators have limited knowledge about accessibility and accommodation. In a study it was found that the majority of primary care practice administrators were neither aware of the list of accessible equipment (e.g., height-adjustable exam tables) nor what accessible equipment existed in their healthcare facility [21].So we planned to introduce our learners to the adoption of universal design in our campus. Our initial plan was to visit the artificial limb centre which belongs to our university. We changed the plan to observation and photography of universal design and access facilities in our campus as the last session after 4.5.8. The learners actively observed and appreciated the activity [fig. 3].

Assessment of disability competencies requires multiple methods to suit multiple domains of learning and objectives. Disability competencies were a new curriculum and assessment methods were not mentioned in the foundation booklet. So we decided to assess by using reflections and grading them, as well as obtaining feedback on a scale of 1-10 for satisfaction.

Since the foundation course is for sensitization, our method was also perceived as effective by our faculty.

Future scope: We plan to use MCQs and short answers for competencies 4.5.1, 4.5.2, 4.5.4; objective clinical assessment sessions for 4.5.3, 4.5.5; participation and reflections for 4.5.7 and 4.5.8 respectively.

**Conclusion and recommendations**

Delivering disability competencies in our institute was a successful novel program. TLMs adapted in our institute are less time, resource and faculty intense but effective in delivering the objectives. These TLM may be adapted as an alternative to the suggested TLMs.

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