

FUTURE MEDICAL DOCTORS ARE READY TO PRESCRIBE ANTIMICROBIALS SAFELY AND RATIONALLY

Medical microbiologist and immunologist wrote in 1956 overall, antimicrobials in medical therapy are highly satisfactory. Most of "bacterial infections can be cured simply, effectively, and cheaply. The mortality and morbidity from bacterial diseases have fallen so low that they are no longer among the important unsolved problems of medicine. These accomplishments are widely known and appreciated" [1]. The Nobel laureate Dr. Frank Macfarlane Burnet wrote the following in 1962 "one can think of the middle of the 20th century as the end of one of the most important social revolutions in history, the virtual elimination of the infectious diseases as a significant factor in social life" [2]. The United States Surgeon General, William H. Stewart (1965-1969) uttered that "it is time to close the book on infectious diseases, and declare the war against pestilence won" [3]. Thereafter, the outstanding achievement of antimicrobial drugs generated a misapprehension in the late 1960s and early 1970s that infectious ailments had been defeated. Nevertheless, in 40-50 years' time, currently, infectious diseases remain the third-leading cause of death in the USA [4] and the second-leading cause of death of our planet [5]. Henceforth concerned microbiologist, infectious diseases specialists, and enlighten people raised their voice in their scientific writings have continually stated that above-mentioned quotes were not on the basis of science [6-11]. The everlasting flare-up of antibiotic-resistant infections continues to pestilence global health care [12,13]. Antimicrobial resistance affects both developing and developed countries. Recent global estimates in 2015 reveal 480,000 new cases of multidrug-resistant tuberculosis (MDR-TB), additional 100 000 people with rifampicin-resistant TB who were also newly eligible for MDR-TB treatment, and extensively drug-resistant TB present in 117 countries and at least one case was detected by 2015 [14,15].

The treatment of microbial infections in prehistoric Egypt, Greece, China, and some other places of the planet is well documented [16]. The current epoch of antibiotics on track with the discovery of penicillin by Sir Alexander Fleming in 1928. Since then, antibiotics contributed a lot for mankind and saved millions of lives. The situation and conquering over microbial diseases have been totally changed in past few decades. Overuse, misuse, and unnecessary of antimicrobials have been blamed principally for the growth and expansion of microbial resistance [17-23]. The Guardian made a headline news that "doctors write 10 million needless antibiotic prescriptions a year" [24]. Moreover, multiple studies reported from all over the planet that medical students are not adequately prepared to prescribe antimicrobials appropriately [25-31]. Prescribing medicines is the most common clinical intervention for any medical doctor throughout their working life to recuperate the health of their patients [32]. Moreover, prescribing is a multifaceted, thought-provoking, and progressively onerous job that necessitates a comprehensive knowledge of medicine and diseases combined with an empathetic attitude of care and integrity toward the patient and the society [33,34]. The prescribing process includes essential four steps: (i) Precise diagnosis; (ii) evaluating the benefit to harm; (iii) selecting the right drug, dose, and necessary dialog with the patient about the anticipated treatment options; and (iv) probable beneficial and adverse effects [35]. There has a long history of clinical pharmacology in promoting rational prescribing but students highly dissatisfied regarding teaching therapeutics and their preparedness toward prescribing. Students have reported that they were not provided enough time in the development of real-world therapeutics [35,36]. Another study conducted in 30 of the 32 UK medical schools reported that clinical pharmacology and therapeutics teaching in these medical schools is quite disparate and the majority

of the schools possess any assessment program to evaluate students prescribing skill. Moreover, whether teaching programs were directed for the development real-world prescribing skill [37]. The theoretical, clinical pharmacology and rational therapeutics teaching transfer knowledge to undergraduate medical students; however, students failed retained this theoretical knowledge when they graduated. Hence, young medical doctors are adequately prepared to face the everyday life to prescribe the safe and rational use of medicine [38]. The principal goal of clinical pharmacology and therapeutics is "to improve the care of patients by promoting the safe and effective use of medicines and to evaluate and introduce new therapies" [39]. Therefore, the answer remains in improving clinical pharmacology teaching and learning in undergraduate curriculum [40,41] with necessary assessment program regarding prescribing skill [40] need to incorporate with the hope situation will improve to provide better health care for common people of this planet.

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