

Advances in the Field and Advancing the Field

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Commentary

Since the 1958 publication on the measurement of REM sleep the practice and research of sleep medicine has advanced. From the teeming reels of polygraph paper flow from an all-night study to today's digital record, both practitioners and scientists have contributed to the understanding of sleep. In the laboratory, locations corresponding to the initiation of sleep, start and stop of dream sleep and correspondence of the sleep cycle to the other systems of the body have been identified. The applied behavioral laboratory studies have revealed descriptions of the function of sleep and impact on behaviors of consciousness, memory and learning [1]. Clearly the demarcation of the science of sleep medicine and the clinical practice has yielded answers to larger questions such as, "What happens when we sleep; what is the role of sleep?"

To the scientific contributions, the practice of sleep has cultivated a field where sleep disorders can be identified and treated. In 1980, the CPAP device provided relief to millions of identified sleep apnea sufferers [2]. With this, the developments of special formulations of sleep medicines—the short term hypnotic medications provided effective and non-problematic means to pharmacologically address the insomnia sleep disturbance. Further clinical trials applications of medicines for periodic limb movement disorder, narcolepsy and REM behavior disorder provided treatment resources. Brain imaging studies represent the means by which current neuroscience hypotheses of sleep behaviors are successfully investigated [2]. These representative achievements have been pivotal in the specific, sensitive care of sleep disordered individuals.

Behavioral studies of treatment have provided empirical support for Cognitive Behavioral Therapy for insomnia across a variety of formats (e.g., individual, group, couples, online) [1]. In the diagnosis and treatment of childhood sleep disorders, a number of behavior therapy regimens have proven to be effective (i.e., Behavioral intervention for Limit Setting Disorder). To this, a myriad of valid measures have been designed to detect sleep disturbance symptomology and provide a standard for diagnosis (e.g., Pittsburgh Sleep Disturbance Questionnaire). Newer formulations in these areas are set to specific behaviors such as at sleep onset, at wakeup and during the wake

day. Current practice investigations examine the form of number of therapeutic sessions to outcome to enhance treatment effectiveness.

The few selected representations of the advancements in the field of Sleep Medicine prompt the question of what new areas and ideas are needed to substantially contribute to the current wealth of science in the practice of sleep medicine. The first area would be additional Neuroscience investigations to build on the identification of structures and genes/chromosomes identified with Sleep [3]. The triggering role and cascade of actions in these areas during typical and disturbed sleep is needed. While CPAP instruments allow for numerous settings that all work to correct the apnea while providing comfort to the patient, advances in the efficiency of their deployment and addressing the issue of mask fit could probably use some more attention. The effectiveness of CBT in the treatment of insomnia could extend to the design of approaches to integrate essential treatments of weight loss and CPAP compliance with sleep apnea patients. In the pharmacological field, a matching of an individual's genome to their receptivity of medications could be used to treat their sleep disturbance. For example, while infrequent, those with poor reactions to Ambien medication could avoid this and move forward to another hypnotic medication that their genotype is more receptive to [3]. Finally, the substantial strides made in identifying the health changes associated with poor sleep quality (i.e., hypertension, obesity) need to broaden to include further understanding of the etiological and interactional mechanism of sleep and health [1,3].

Respectfully, I honor the achievements made in the Sleep Medicine field in science and practice. And, I humbly, from some small experiences suggest the areas of need for further development.

"A well spent day brings happy sleep." Leonardo da Vinci.

References

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