[0080] Specifically, the execution environment setups include setup of brightness of an execution environment using an illuminance sensor, and other modules are executed under a set light environment.

[0081] In general, sunlight is closely related to the eye health. The same strong light stimulation as in exposure to direct sunlight acts in nerve cells of the retina to promote secretion of dopamine, thereby inducing synthesis of proteoglycans. This is a factor essential for normally adjusting an axial length of the eye.

[0082] As described above, the illuminance under a current environment may be measured using an illuminance sensor to provide light stimuli to a patient, an alarm of a current light environment may be provided to brightly control an environment at which a patient participates in digital therapy.

[0083] Referring to FIG. 7B, specific examples of instructions for an eye exercise module, and a method of collecting output data are shown. In this case, the may be included as part of the configuration of the digital instruction generation unit 010 shown in FIG. 2.

[0084] The digital instructions for eye exercise include controlling the patient's eye exercise, biofeedbacks, eyeball-related behaviors, and the like. Specifically, behavioral instructions for the eye exercise module may monitor the patient's adherence using eye tracking technology such as eye exercise, eye blinking, remote staring, eye closing, and the like. However, a collection of the execution outcomes for the eye exercise module is not limited to the eye tracking technology, and include directly inputting the execution outcomes of the instructions by the patient.

WHAT IS CLAIMED IS:

1. A digital apparatus for treating myopia, the apparatus comprising:

a memory storing a digital program for treating myopia; and

a processor configured to execute the digital program to:

generate, by a digital instruction generation unit, one or more digital instructions based on at least part of a plurality of digital therapeutic modules configured to regulate one or more neurohumoral factors to treat myopia, wherein the plurality of digital therapeutic modules are selected from the group consisting of a light environment setup module, an eye exercise module, a physical exercise module, a fun module, and an accomplishment module;

provide, by the digital instruction generation unit, the one or more digital instructions to a first user who is a subject to myopia treatment;

collect, by an outcome collection unit, the first user's execution outcomes of the one or more digital instructions,

wherein the one or more digital instructions are deduced in relation to the first user's environment, behaviors, emotions, and cognition.

2. The digital apparatus of claim 1, wherein each of the plurality of digital therapeutic modules regulates at least part of the one or more neurohumoral factors for inhibiting progression of and treatment of myopia;

the one or more neurohumoral factors comprise at least one of insulin-like growth factor (IGF), cortisol, or dopamine.

3. The digital apparatus of claim 1, wherein the plurality of digital therapeutic modules comprise the light environment setup module for promoting IGF secretion and the eye exercise module for promoting IGF secretion.

4. The digital apparatus of claim 3, wherein the light environment setup module for promoting IGF secretion comprises a digital instruction related to light environment control or light environment notification for the first user.

5. The digital apparatus of claim 3, wherein the eye exercise module for promoting IGF secretion comprises at least one of digital instructions related to eye exercise, eye blinking, remote staring, eye closing, or eyeball-related behavior control for the first user;

wherein the processor is further configured to monitor the first user’s adherence to the one or more digital instructions using eye tracking technology.

6. The digital apparatus according to any one of claims 1 to 5, wherein the plurality of digital therapeutic modules comprise the physical exercise module for promoting IGF secretion and inhibiting cortisol secretion.

7. The digital apparatus of claim 6, wherein the physical exercise module for promoting IGF secretion and inhibiting cortisol secretion comprises at least one of digital instructions related to slow and comfortable physical exercise, abdominal exercise, breaks, relaxation, deep breathing, meditation, or eye massage for the first user.

8. The digital apparatus of claim 7, wherein the processor is further configured to collect the first user's execution outcomes of the one or more digital instructions using a biofeedback apparatus or a general-purpose sensor.

9. The digital apparatus of claim 1, wherein the plurality of digital therapeutic modules comprise the fun module for inhibiting cortisol secretion.

10. The digital apparatus of claim 9, wherein the fun module for inhibiting cortisol secretion comprises at least one of digital instructions related to music, games, or videos.

11. The digital apparatus of claim 1, wherein the plurality of digital therapeutic modules comprise the accomplishment module for promoting dopamine secretion.

12. The digital apparatus of claim 11, wherein the accomplishment

module for promoting dopamine secretion comprises at least one of digital instructions related to task, compensation for performing digital instructions, guardian’s compliment, games, learning, quizzes, hidden pictorial puzzles, difference pictorial puzzles, quiz about health information, or quiz about digital therapeutics literacy.

13. The digital apparatus of claim 1, wherein the processor is further configured to generate the one or more digital instructions based on at least one of information received from the first user or input from a second user.

14. The digital apparatus of claim 13, wherein the input from a second user comprises an outcome of the second user's prescription for the first user.

15. The digital apparatus of claim 13, wherein the information is received from the first user comprises at least one of the first user’s basal factors, medical information, or digital therapeutics literacy;

wherein the basal factors comprises the first user’s amount of activity, heart rates, sleep, and meals;

the medical information comprises the first user’s electronic medical record (EMR), family history, genetic vulnerability, and genetic susceptibility,

wherein the digital therapeutics literacy comprises the first user’s accessibility and an acceptance posture to the digital therapy and the apparatus.

16. The digital apparatus of claim 1, wherein the processor is further configured to collect the first user's execution outcomes of the one or more digital instructions by monitoring the first user's adherence to the one or more digital instructions or allowing the first user to directly input the first user's execution outcomes to the one or more digital instructions.

17. The digital apparatus of claim 1, wherein the processor is further configured to repeatedly execute the generating of the one or more digital instructions and the collecting of the first user's execution outcomes according to feedback loops; and

generate the first user's digital instructions for a present cycle based on the first user's digital instructions and execution outcomes in a previous cycle.

18. A method of operating a digital apparatus for treating myopia, the method comprising:

generating, by a digital instruction generation unit, one or more digital instructions based on at least part of a plurality of digital therapeutic modules configured to regulate one or more neurohumoral factors to treat myopia, wherein the plurality of digital therapeutic modules are selected from the group consisting of a light environment setup module, an eye exercise module, a physical exercise module, a fun module, and an accomplishment module;

providing, by the digital instruction generation unit, the one or more digital instructions to a first user who is a subject to myopia treatment;

collecting, by an outcome collection unit, the first user's execution outcomes of the one or more digital instructions,

wherein the one or more digital instructions are deduced in relation to the first user's environment, behaviors, emotions, and cognition.

19. A computer-readable recording medium storing a program to execute the method of claim 18 on a computer.