**An e-card game to promote student engagement in pharmacology: A 3-year data.**

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**Introduction.** As the first topic of pharmacology teaching, learning autonomic nervous system (ANS) pharmacology contains many unfamiliar terminologies to students. Therefore, information overload is a common problem and there is a need to initiate a fun and effective add-on tool to help students memorize these drugs.

**Aims.** We aimed to create an electronic game called PharMatch to help students match ANS drugs with their mechanism of action, indications, and side effects.

**Methods.** PharMatch contains 4 types of cards: drug name, mechanism of action, indication, and side effect. The card layout is similar to a solitaire game. Players match each drug name (18 cholinergic and 28 adrenergic drugs) with other properties. Self-drawn cartoon figures are used to illustrate indications and side effects. The time will stop when players collect a full stack of five drugs. PharMatch was launched as a supporting learning tool from the academic year 2022 to 2024. Self-rating scores using a Likert scale of 1 to 5 and comments were collected after the summative examination.

**Results.** Ramathibodi Medical School has 177 to 206 students during the academic year 2022 to 2024. The participation rate defined as at least one finished game increased from 60.3% in 2022 to 79.6% in 2024. The percentage of students who finished the game more than 50 times was 19.6%, 24.3%, and 27.2%, in 2022, 2023, and 2024, respectively. The self-rating scores of drug name memorization were 4.29, 4.25, and 4.32, respectively.

Students regarded PharMatch as useful and fun.They also liked the graphic and the challenge that one drug was paired with several indications or side effects.

**Discussion.** The increase of student engagement points out that game-based learning can be a solution for subjects with information overload like pharmacology. Therefore, an e-card game like PharMatch is an effective learning tool.