

# creaTion of e-learning modules for the management of viRAI iNfections for cardiac and kidENy tRansplant staff (TRAINER)



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## Background

- Solid organ transplant is a complex area of practice that necessitates specific and standardized staff training
- Formalized staff training is lacking in cardiac & renal transplant
- Survey suggests that staffs' knowledge gaps prevent patients from receiving optimal care & lead to poor comorbidity control
- Nurse led interprofessional approach in renal transplant patients showed an increase in drug and adverse events optimization and decreased emergency department visits
- Our team created **five e-learning modules** available on LearningHub (course code: 24738) starting Feb. 2021
- Modules include: Immunosuppression (IMS), Cytomegalovirus (CMV), Epstein Barr Virus (EBV), BK Virus (renal only), and Pharmacokinetics (PK) and Therapeutic Drug Monitoring

## Objectives

1. To examine how effective the created e-learning modules are in enhancing staff's knowledge, self-efficacy and content satisfaction
2. To evaluate the usability and utility of the modules by assessing staff satisfaction with online platform

## Methods

- **Design:** prospective and observational
- **Population:** nurses and pharmacists with less than 2 years full time experience in cardiac or renal transplant ward/clinic at St. Paul's Hospital
- **Recruitment:** email invitations to eligible nurses & pharmacists and in-services provided to cardiac and renal transplant wards
- At end of each module, participants invited to complete:
  - **Knowledge assessments** developed by clinical experts. Passing grade is defined as initial score of over 80% for each module
  - **Survey** containing 15 questions using 5 point Likert scale to assess 3 categories: self-efficacy, content and platform satisfaction after each module.
- **Statistics:** descriptive
  - Average in surveys defined as mean rating of the five focused questions in each category

Table 1: Survey Respondent Characteristics (N=14)

Characteristics	Number (N)	Percentage (%)
Female	12	86
Age (years): 20 to 50	11	79
<b>Profession</b>		
Nurse	6	43
Pharmacist	8	57
<b>Years of Clinical Experience</b>		
Less 10	6	43
More 10	7	50
<b>Months in Transplant</b>		
0 to 1	7	50
13 to 18	3	21
19 to 24	3	21

Figure 1: Initial Knowledge Assessment Scores of Each Module

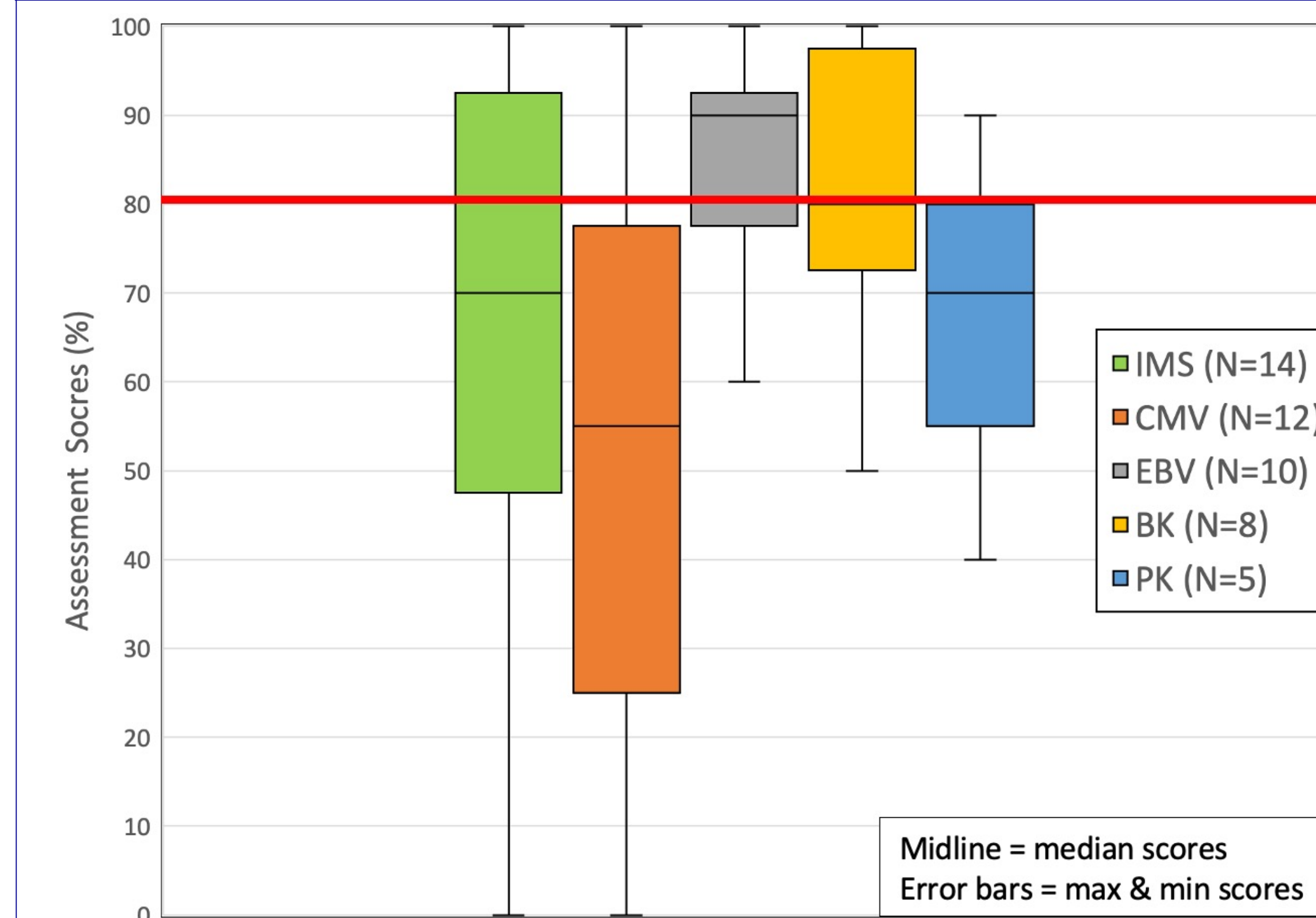


Figure 2: Average Self Efficacy Ratings of Each Module

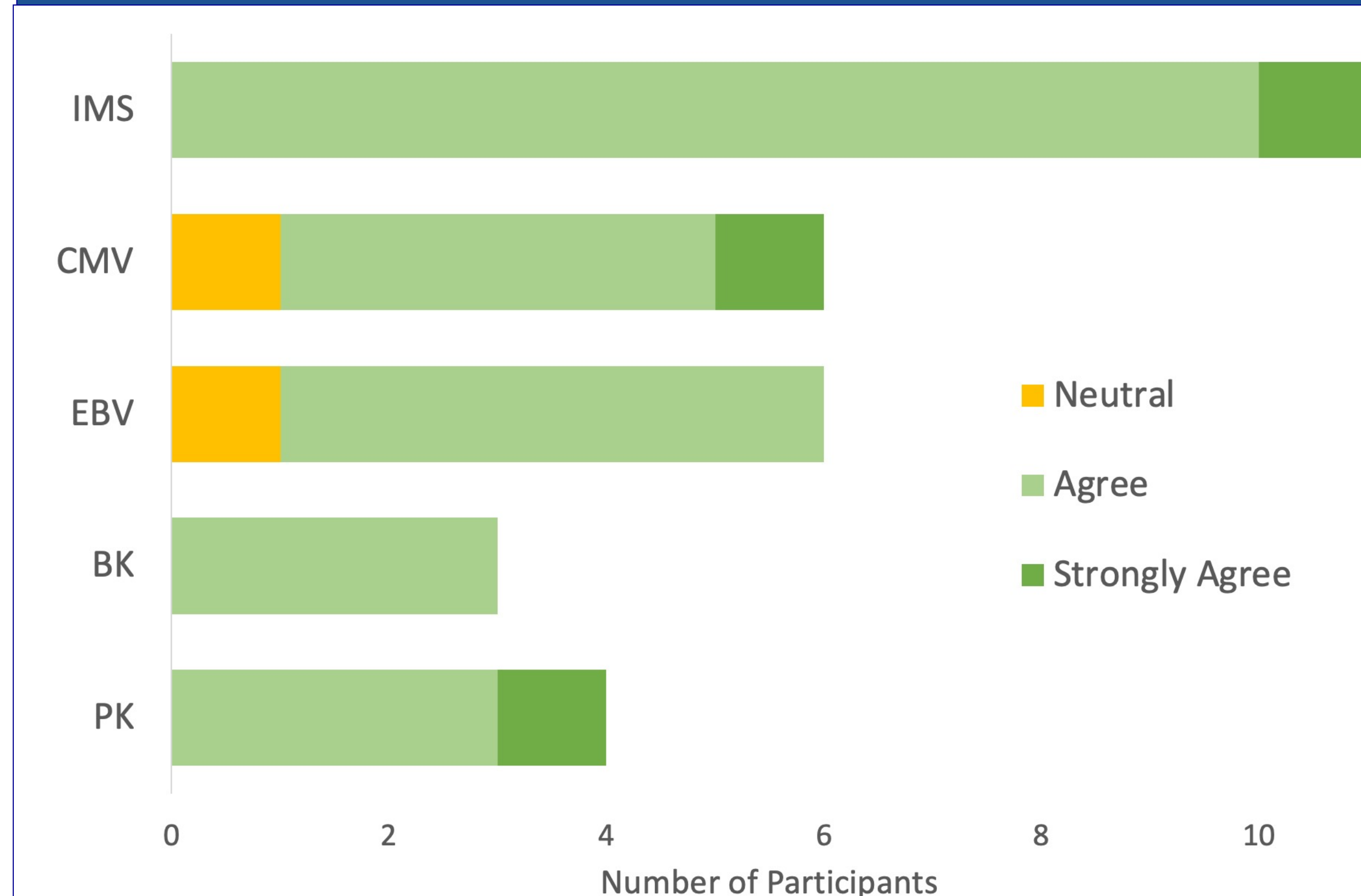


Figure 3: Average Content Satisfaction Ratings of Each Module

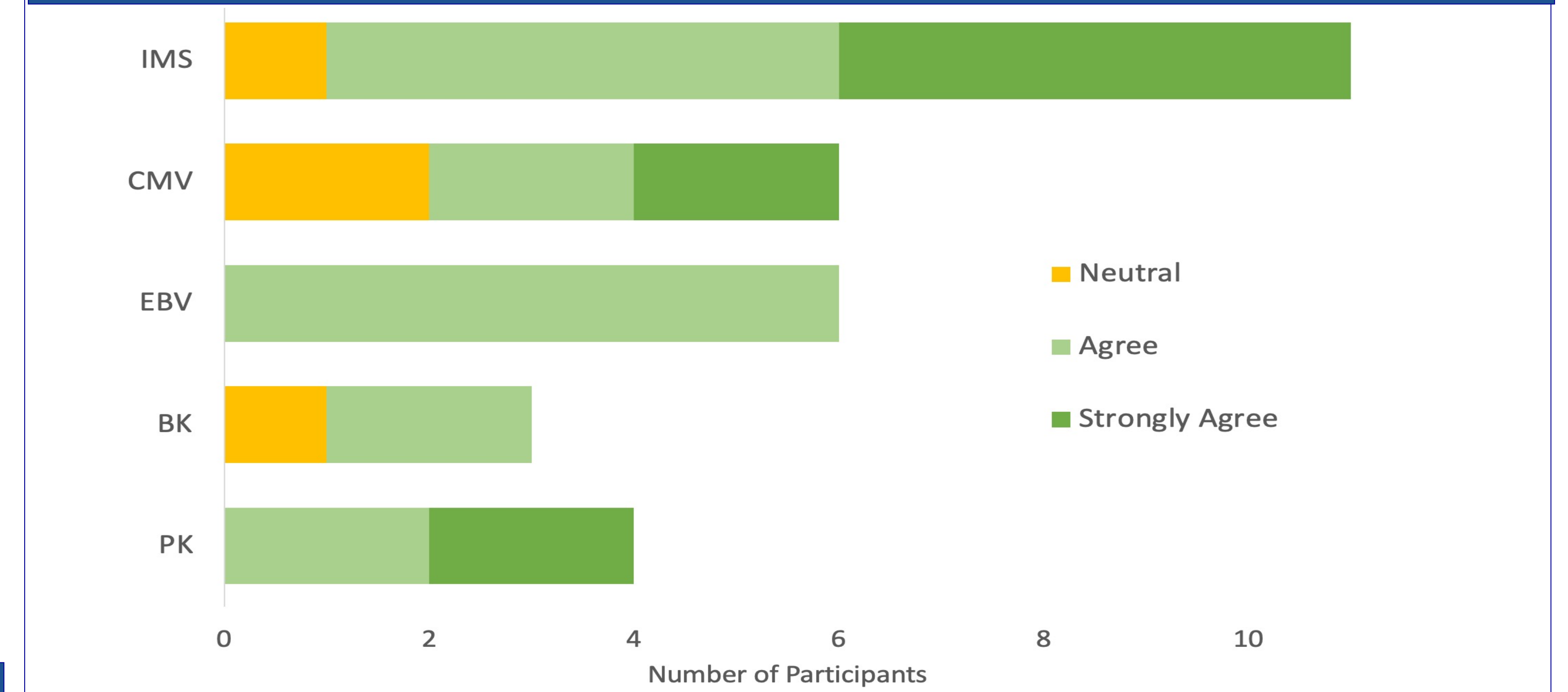
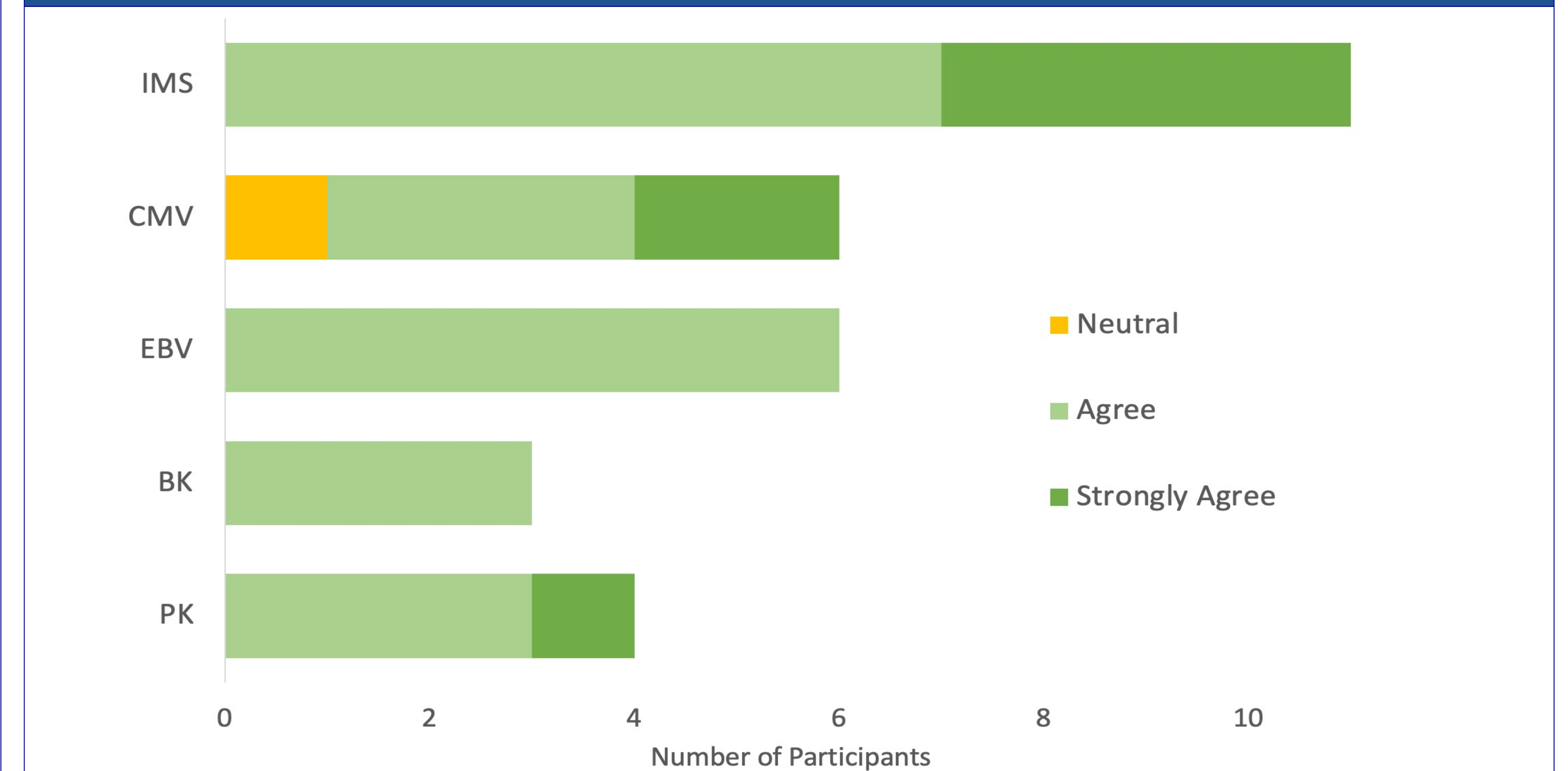


Figure 4: Average Platform Satisfaction Ratings of Each Module



## Limitations

- Delays in content development due to COVID-19 pandemic
- Small sample size and low average survey response rates (~43%)
- Not designed to assess long term knowledge retention and applicability
- Technical glitches in LearningHub affecting the collection of initial knowledge assessment scores
- Passing grade of 80% for the knowledge assessment may be too high

## Conclusions

- Participants did not meet the initial passing grade of 80% in three modules, but did achieve at least 70% on average in all modules except CMV
- Participants generally agreed that the modules improved their self-efficacy and were satisfied with the content and learning platform.
- Future implications: use results to improve modules