

# A Probiotic Product Claim Exercise Integrating Natural Medicine and Drug Literature Evaluation Skills

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## BACKGROUND

- Natural supplements, such as vitamins, herbals, or even probiotic strains are increasingly being used by patients to address a variety of medical needs.<sup>1</sup>
- Dietary supplements do not require Federal Drug Administration (FDA) approval before being marketed and sold and are minimally evaluated in the primary literature.<sup>2</sup> Therefore, a challenge is posed for pharmacists to address patient questions related to these products and their health-related claims.<sup>3</sup>
- A select number of active learning interventions are reported in the literature from doctor of pharmacy (Pharm.D.) programs,<sup>4-6</sup> yet an opportunity remains to reinforce biomedical gap specifically in the area of probiotic product claims.
- A manufacturer's claim intervention was designed for second-year student pharmacists enrolled in both a Natural Medicines and Biomedical Literature Evaluation course to exercise relevant skills in a probiotic context.

## OBJECTIVE

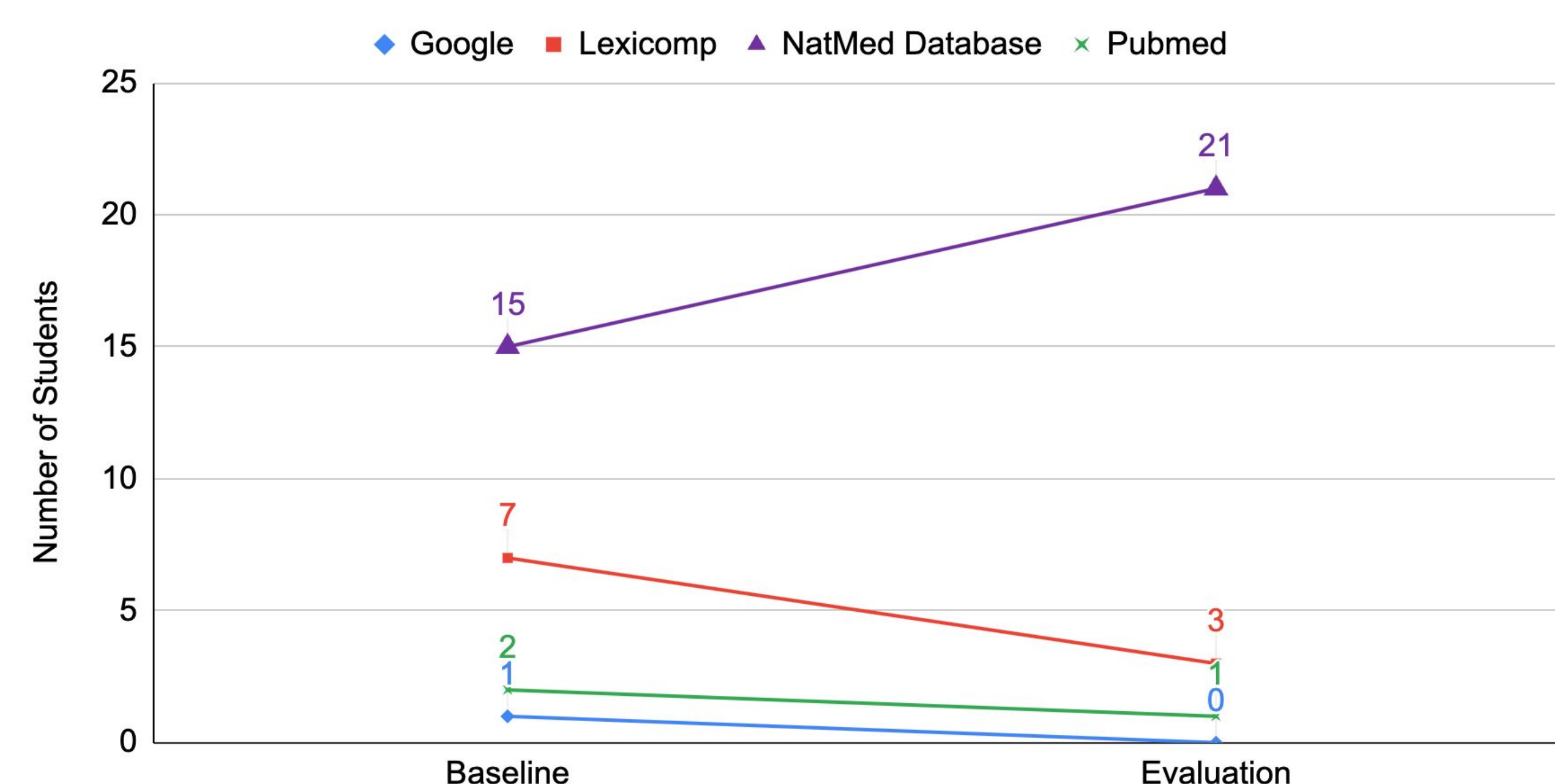
- The objective of this study is to evaluate the impact of an active learning classroom experience that involved students practice acquired skills in the context of a probiotic product claim inquiry.

## METHODS

- The Lipscomb University Institutional Review Board approved this project. Twenty-five second-year student pharmacists participated in the research associated with evaluating the learning exercise.
- On the day of class, student engaged in a baseline survey to capture knowledge of databases appropriate for supplements and natural medicine products like probiotics and perceptions on confidence and importance to the pharmacy profession.
- In groups, students assessed the safety and efficacy of a probiotic product from a provided list using a slideset template. Groups evaluated the manufacturer's claim by using appropriate resources and primary literature as supportive evidence. Student groups compiled the product profile and delivered a speed presentation to the class.
- An evaluation survey was administered at the end of the exercise and changes from the baseline survey were analyzed in Excel using descriptive statistics.

## RESULTS

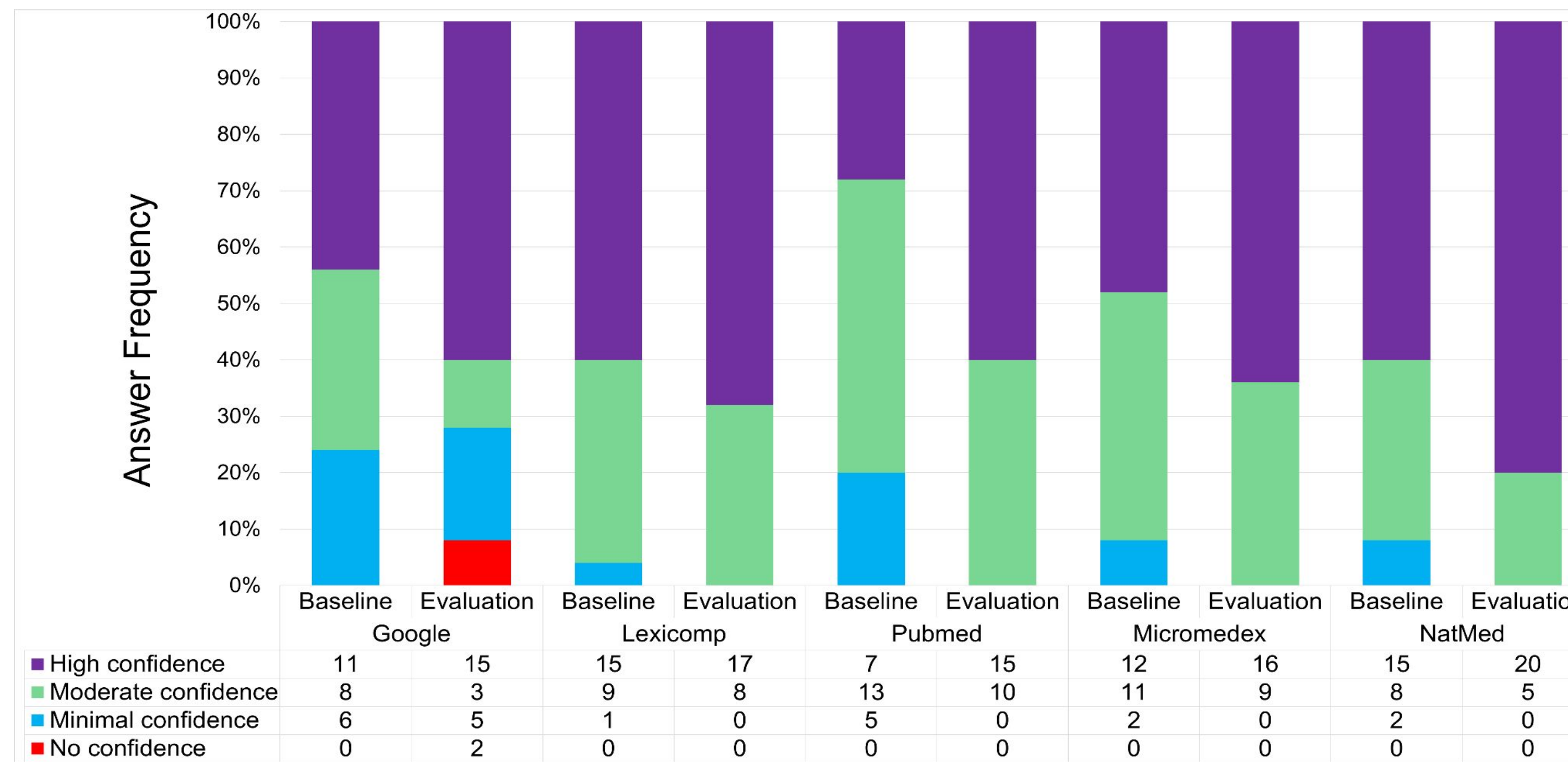
Figure 1. Student's Primary Resource Selected to Validate Probiotic Products



- NatMed Database was the highest ranked resource overall and student selection increased markedly after the intervention.

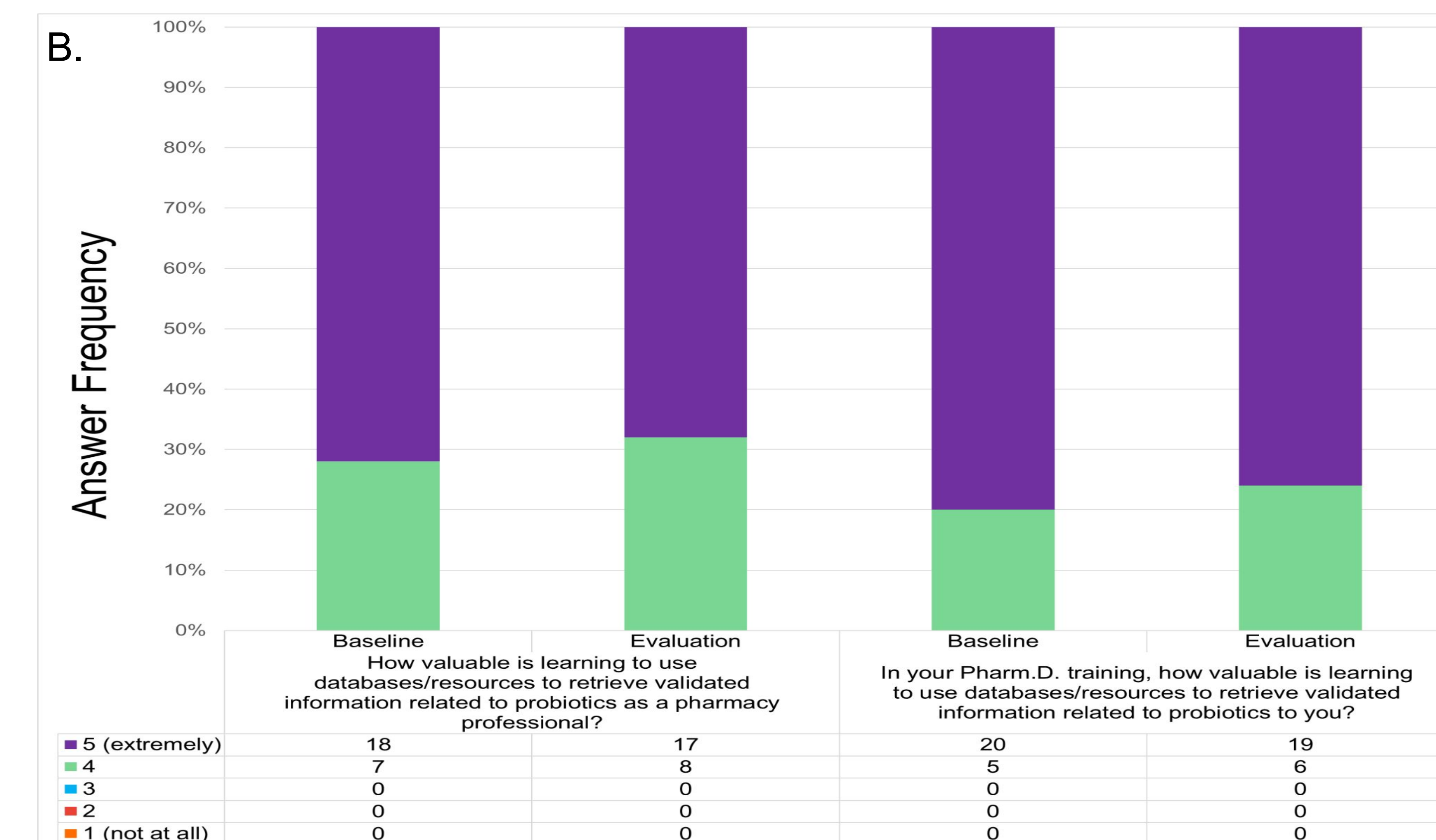
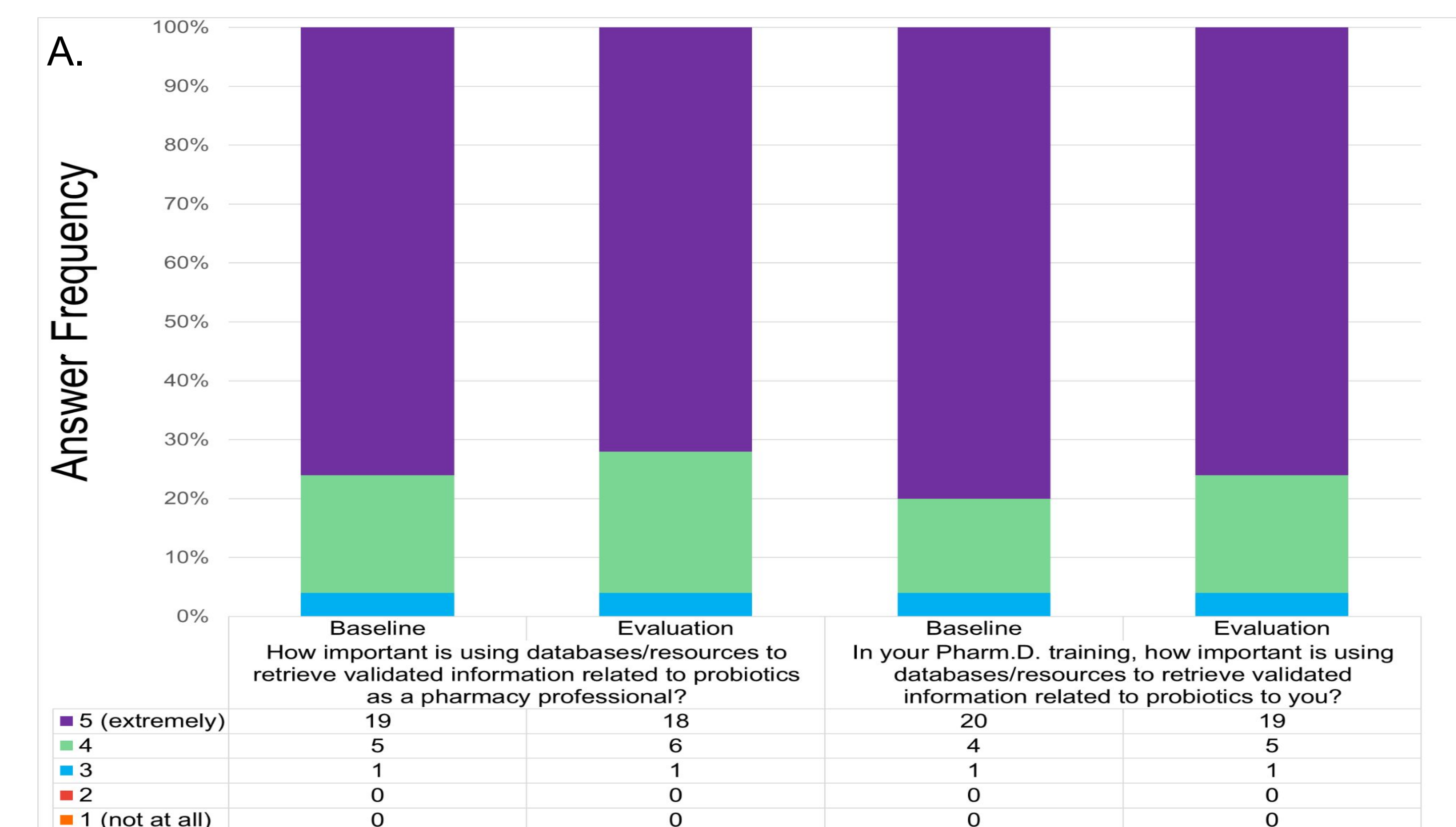
## RESULTS

Figure 2. Perceived Confidence in Resources Used to Retrieve Validated Information about Probiotics.



- Students reported an high degree of confidence in all listed resources.

Figure 3. Student's Perceived Importance (A) and Value (B) for Pharmacists to Use Validated Resources to Evaluate Probiotic Products.



- The majority of students tended to agree that using databases/resources to retrieve validated information related to probiotics is an important and valuable skill set for themselves and the profession.

## EVALUATION

Table 1. Evaluation of Probiotic Manufacturer's Claim Validation Activity.

	Strongly Agree	Agree	Neither Agree or Disagree	Disagree	Strongly Disagree	TOTAL
<b>The probiotic manufacturer's claim validation activity was</b>						
interesting to me.	10 (40%)	10 (40%)	3 (12%)	1 (4%)	1 (4%)	25 (100%)
useful to me.	11 (44%)	8 (32%)	6 (24%)	0 (0%)	0 (0%)	25 (100%)
challenging to me.	9 (36%)	6 (24%)	7 (28%)	3 (12%)	0 (0%)	25 (100%)
an enjoyable way to spend class time.	10 (40%)	8 (32%)	4 (16%)	2 (8%)	1 (4%)	25 (100%)
relevant to my training as a pharmacist.	14 (56%)	9 (36%)	2 (8%)	0 (0%)	0 (0%)	25 (100%)
translatable to my work in patient care.	14 (56%)	9 (36%)	2 (8%)	0 (0%)	0 (0%)	25 (100%)
<b>This class experience/exercise</b>						
made me think about probiotics in a different way.	11 (44%)	10 (40%)	3 (12%)	1 (4%)	0 (0%)	25 (100%)
helped me practice my bioliterature evaluation skills.	12 (48%)	10 (40%)	3 (12%)	0 (0%)	0 (0%)	25 (100%)
think about about supplements in a different way.	11 (44%)	9 (36%)	5 (20%)	0 (0%)	0 (0%)	25 (100%)
directly impacted my future as a pharmacist.	11 (44%)	11 (44%)	2 (8%)	1 (4%)	0 (0%)	25 (100%)
taught me a new skill.	12 (48%)	10 (40%)	1 (4%)	2 (8%)	0 (0%)	25 (100%)
should be repeated again.	10 (40%)	7 (28%)	5 (20%)	2 (8%)	1 (4%)	25 (100%)

- Most participants evaluated the probiotic manufacturer's claim validation activity and overall class experience as positive.
- 96% of the students agreed that the probiotic manufacturer's claim validation activity was translatable to their work in patient care.
- 88% of students found direct impact to their future as a pharmacist and 68% of the students agreed the exercise should be repeated.

## CONCLUSIONS AND LIMITATIONS

- The probiotic exercise not only facilitated improvements in database utilization skills but also stimulated critical thinking and appreciation for evidence-based practices within the pharmacy profession.
- Positive feedback from participants further solidifies the value of incorporating such experiential learning activities into pharmacy education.
- Final practice destination may influence the perceived value and importance for individuals that do not imagine probiotic access being prevalent in their destined practice setting.
- A significant limitation to this study is the number of participants from a single College of Pharmacy participating making broader conclusions difficult.

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