



## Teaching Evidence-Based Medicine with a Virtual teaching platform

*A Pilot Study of medical students from Dow International Medical college in Karachi, Pakistan*

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# Background

## Current EBM curriculum as a barrier for Evidence based practice

- Inconsistency in the curriculum content of EBP teaching and learning
  - Lack of standardized set of minimum core competencies in EBP
  - **Clinically detached** (Didactics/classroom, traditional Journal clubs)
- Lack of **Longitudinal teaching curriculum** in medical schools
  - Inadequate EBM competency assessment tools
- **Lack of uniformed Virtual EBM competency based training**

*Coomarasamy and Khan et al. systematic reviews (2004 & 2006)*

*Vira et al, 2019. American Journal of Pharmaceutical Education (2019)*



# Journal Club helps to keep up with new research

Journal Club is an essential and **most common academic activity** to

- ☐ Read and appraise research papers
- ☐ Keeping up-to-date with current literature
- ☐ Mandatory ACGME competencies (PBLI)
- ☐ **Provide EBM skills training**
- ☐ **Critical appraisal skills training**

Current Journal club is



Paper Based



Time  
Consuming



Disorganized



Technology  
Challenged

**There is no Virtual Journal Club Platform!**



# Research Hypothesis

*Can we teach EBM skills to medical students utilizing Clinically integrated Comprehensive virtual EBM learning platform?*



# Objectives

- *To Teach EBM skills to medical students using a Virtual EBM learning platform with built in Point of care Clinical question capturing tool, Virtual Journal club, and Longitudinal EBM curriculum (Ask, Acquire, Appraise, Apply)*
- *Evaluate the useability of Virtual EBM teaching platform in teaching EBM skills to medical students at DIMC, Pakistan*
- *Collect, analyze the pre & post study survey feedback to evaluate the feasibility of Virtual EBM teaching platform*



# Study Design & Methodology

## **Study Design:**

- A mixed method study

## **Study subjects:**

- Medical students of all years at DIMC, Karachi, Pakistan (N=20)

## **Intervention:**

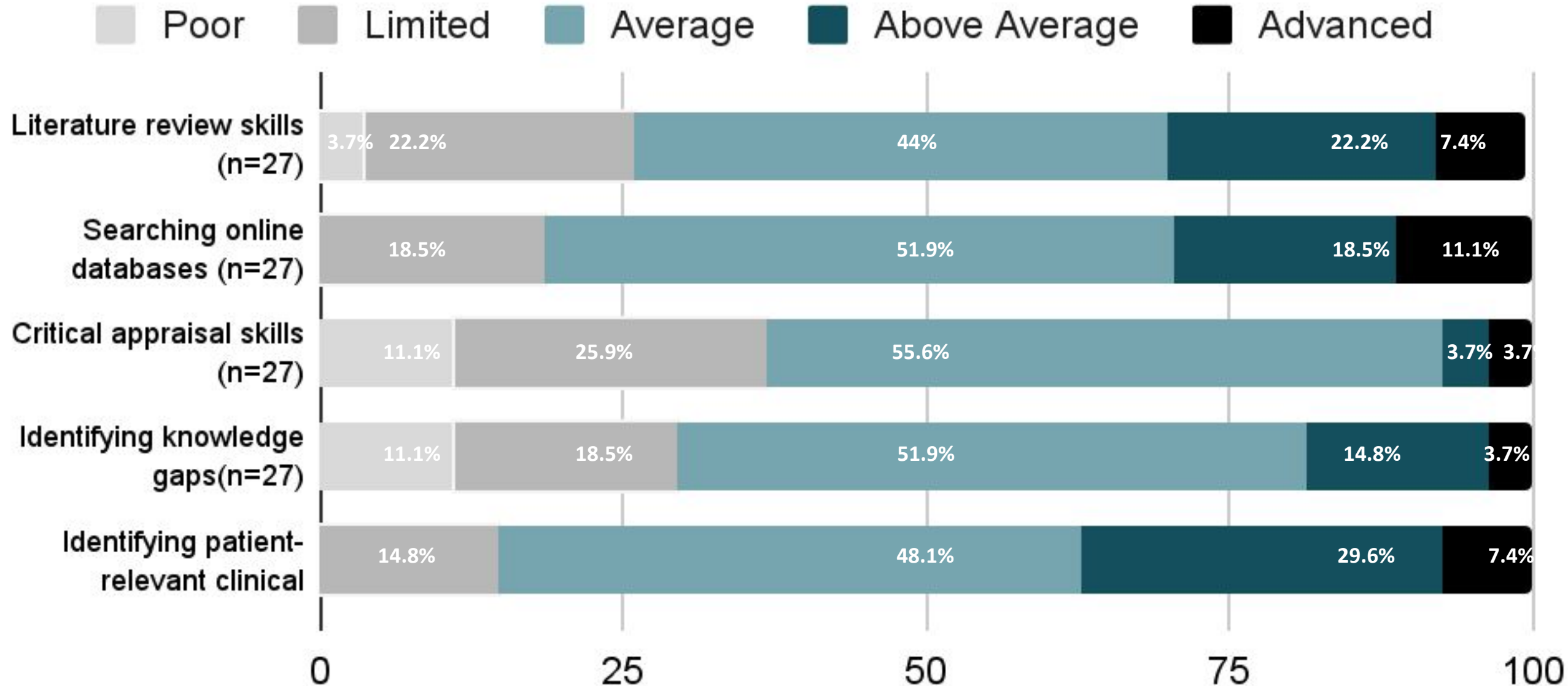
- Virtual EBM learning platform

## **Outcome:**

- Pre and post survey feedback about Virtual EBM platform, Knowledge, attitudes and skills assessment



# Pre Course Survey- EBM Skills



# Pre course Survey

## EBM Knowledge

Prior EBM training

Most used search info for med info

Frequency of reading scientific literature

Main Source of health info

**80% or more rely on textbooks and Google search for medical information**

**66.7% (n=18) had previous EBM/ biostatistics training**

Google=88.9% (n=24)

monthly=56% (n=14), weekly=20% (n=5)

textbooks=88.9% (n=24)

## EBM Skills

Literature review skills

Searching online databases

Critical appraisal skills

Identify knowledge gaps in clinical based practice

Identifying patient relevant questions

**50 % report to have average EBM skills**

average=44% (n=12)

average=51.9% (n=14), above average=18.5% (n=5)

average= 59.3% n=16), Limited experience =22.2% (n=6)

average=51.9% (n=14), Limited experience=18.5% (n=5)

average=48.1 (n=13), above average=29.6% (n=8)

## EBM attitudes

EBM is crucial for the practice of physicians

EBM is necessary to provide optimal treatment

Incorporating research results into healthcare is important

**63% of participants strongly agree that EBM is important to provide optimal treatment.**

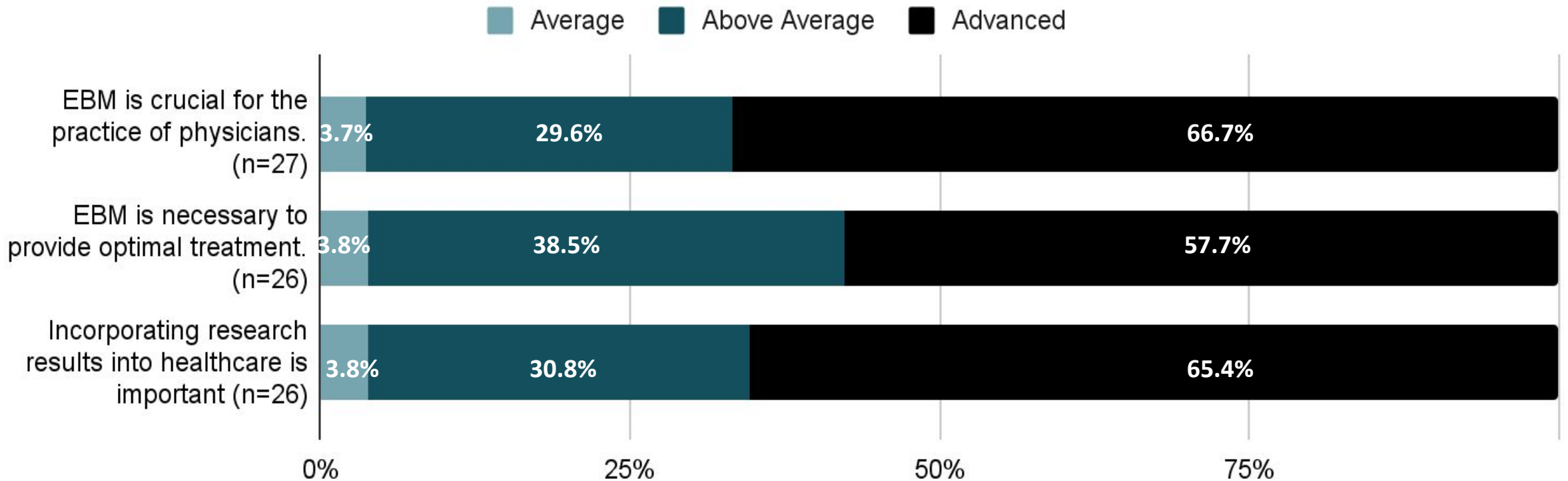
Strongly agree=66.7% (n=18), somewhat agree=29.6% (n=8)

Strongly agree= 57.7% (n=15), somewhat agree=38.5% (n=10)

Strongly agree=65.4% (n=17), somewhat agree=30.8% (n=8)



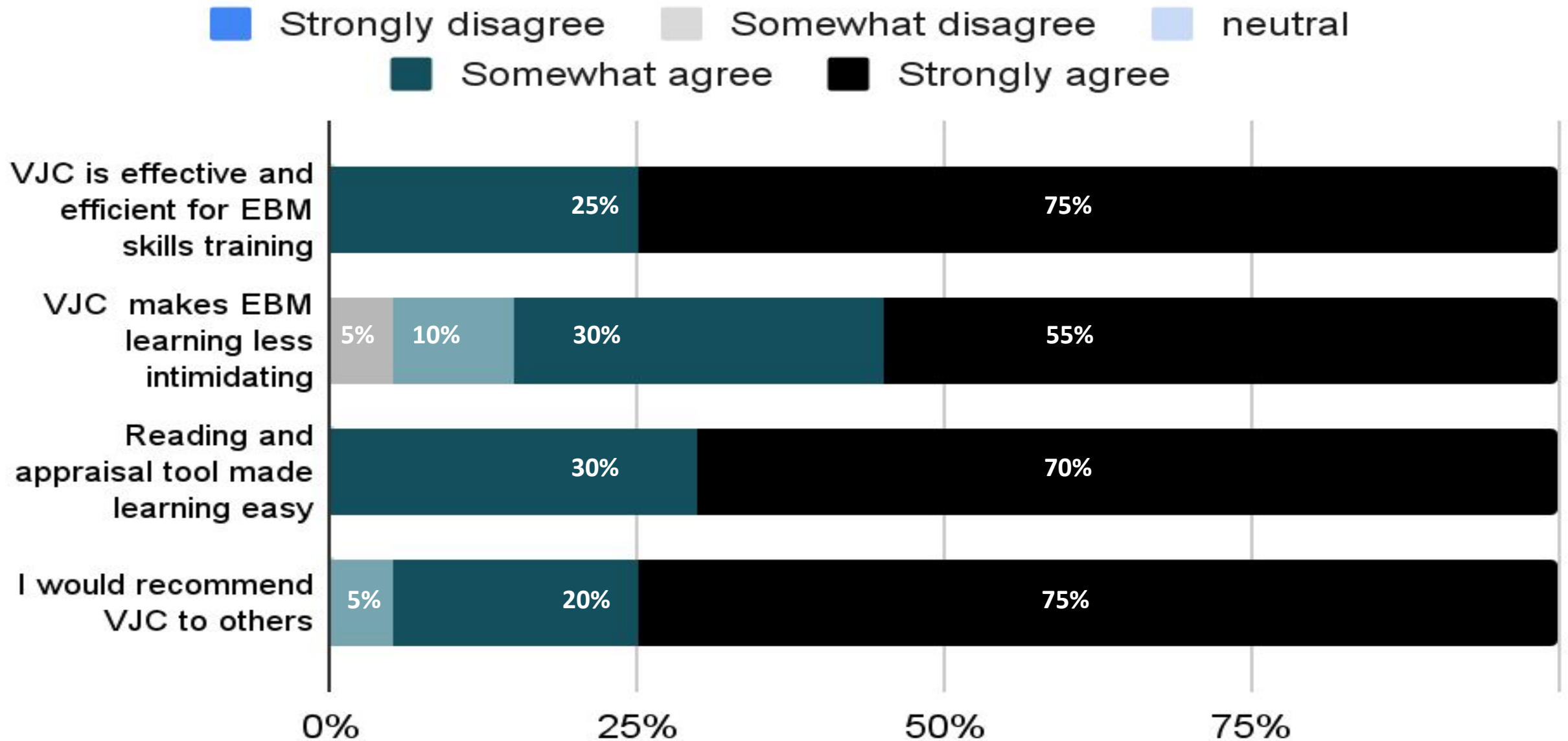
# Pre Course Survey- EBM Attitudes



# Post Course Survey- Summary

<b>VJC effectiveness and usability (75%)</b>  VJC is effective and efficient for EBM VJC makes EBM learning less intimidating Reading and appraisal tool made learning easy I would recommend VJC to others	<b>More than 75% participants agree that VJC is an effective, User friendly EBM training tool.</b> Strongly agree= 75% (n=15) Strongly agree= 55% (n=11), Agree= 30% (n=6) Strongly agree= 70% (n=14), Agree=30% (n=6) Strongly agree= 75% (n=15)
<b><u>EBM Central/ Knowledge (75%)</u></b>  Course was effective in teaching EBM	<b>60% of participants strongly agree that EBM course will enhance learning and lead to confidence in clinical practice.</b> Strongly agree= 60% (n=12), Agree= 30% (n=6)
<b>EBM course integrated into school curriculum will enhance learning</b>  EBM course will lead to confidence in clinical practice	Strongly agree= 75% (n=15), Agree= 25% (n=5) Strongly agree= 65% (n=13), Agree=35% (n=7)
<b><u>EBM Skills (75%)</u></b>  VJC is an advanced and efficient method for skills training Longitudinal course in school will enhance skills EBM course improved fundamental skills (4As)	<b>75% of participants strongly agree that EBM course improved fundamental skills and enhance skills.</b> Strongly agree= 75% (n=15), Agree= 25% (n=5) Strongly agree= 75% (n=15), Agree= 25% (n=5) Strongly agree= 65% (n=13), Agree= 25% (n=5)
<b><u>EBM Attitudes</u></b>  I am confident in ability to critically appraise articles Competency based EBM course would increase confidence in EBP	<b>65% of participants strongly agree that EBM course increases confidence in EBP and critical appraisal of articles.</b> Strongly agree= 50% (n=10), Agree= 30% (n=6) Strongly agree= 65% (n=13), Agree= 35% (n=7)

# Post-Course survey- VJC Usability and effectiveness



# Conclusion

- Virtual EBM Learning platform was successfully implemented for complete cycle of EBM cycle training (**Ask, Acquire, Appraise, Apply**)
- Students reported improved EBM knowledge, EBM skills, through Virtual EBM learning platform training
- EBM platform made EBM skills training easy and less intimidating
- Longitudinal Virtual EBM learning course in medical school curriculum was well accepted by study participants
- Virtual Journal club/EBM training platform was effective, efficient, and convenient in learning EBM skills in medical school settings

# Pilot study at DIMC

## Thank you

*Any Question?*



**READ-APPRAISE-DISCUSS**

