Health science students' knowledge, attitude, and readiness towards epidemiology learning

P1-J3

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Background

- Epidemiology education sets the foundation for disease investigation. It provides the toolkits for a sound research design.[1,2]
- As a required component of the health science curriculum, it requires careful planning and thorough assessment.
- Problem-based learning should be central to a coherent course.[3]

Gap: Few studies highlighted undergraduate health science students' perspectives towards epidemiology learning.

Objective: This study assesses the undergraduate health science students' readiness for epidemiology learning in West Asia, specifically in the Gulf Cooperation Council (GCC) region.

Methodology

Design: Cross-sectional, online survey, convenience sampling

Sample Size: 250 undergraduate students of health sciences

Data Collection: First week of the semester, August 2022 - January 2024

Survey Response Rate: Approximately 40%

Statistical Packages: SPSS 29 (data management), R 4.3.3 (analysis)

Data Analysis: Univariate and multivariate logistic regression

Questionnaire

Knowledge (13 questions scored)

- Is epidemiology hard or soft science?
- Is epidemiology basic or field research?
- Is the knowledge of mathematics required for epidemiology?

Attitude/Opinion (5 questions scored)

- Did epidemiology become popular due to COVID-19?
- Do you want to become a full-time or part-time epidemiologist?
- Is epidemiology a backbone for public health?

Readiness (6 questions scored)

- Have you ever taken a prior public health course?
- Have you ever taken a prior statistics course?
- Have you ever taken any information technology (IT) course?

Result

Participants

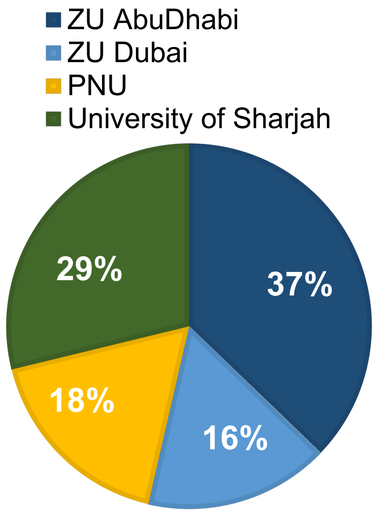

Figure 1. Survey respondents, by academic institution

Characteristics	N=250
Start year	
2017 - 2019	10%
2020	29%
2021	48%
2022	12%
Year of study	
First & second	25%
Third year	69%
Fourth & fifth	6%
Credit hours	
>15 credits this semester	63%
< 10 credits this semester	11%
First degree program	82%

Table 1. Respondents' characteristics

Prior Courses Taken	N= 250
Epidemiology	14%
Public Health	70%
Statistics	83%
Research Methods	41%
Management	33%
IT	66%

Table 2. Prior courses taken by respondents

Course Preference	N= 250
Want a calculation	50%
Want guest speaker	64%
On-campus teaching	68%
Test assessment	67%
Web portal for analysis	81%
One course is sufficient	52%

Table 3. Epidemiology course preferences

Result

Knowledge [> 6 correct = sufficient knowledge]				
	Univariate		Multivariate	
Characteristic	**OR**	**p-value**	**OR**	**p-value**
Fourth & fifth year	0.28	0.037	0.14	0.006
Prior 'epidemiology' course	3.49	0.045	5.75	0.017
Wanting calculation in epi	1.71	0.081	2.08	0.029
Opinion [Yes/no answer = firm opinion]				
	Univariate		Multivariate	
Characteristic	**OR**	**p-value**	**OR**	**p-value**
Prior 'epidemiology' course	2.56	0.034	2.10	0.14
Sufficient knowledge	5.62	<0.001	6.82	<0.001
Positivity [Epidemiology as career or backbone = positive]				
	Univariate		Multivariate	
Characteristic	**OR**	**p-value**	**OR**	**p-value**
Fourth & fifth year	0.29	0.048	0.42	0.2
Taking >15 credit hours	1.64	0.10	2.11	0.029
Prior 'public health' course	0.66	0.2	0.40	0.031
Sufficient knowledge	2.46	0.006	2.45	0.012

Table 4. Crude and adjusted odds ratio (OR); knowledge, opinion, and positivity

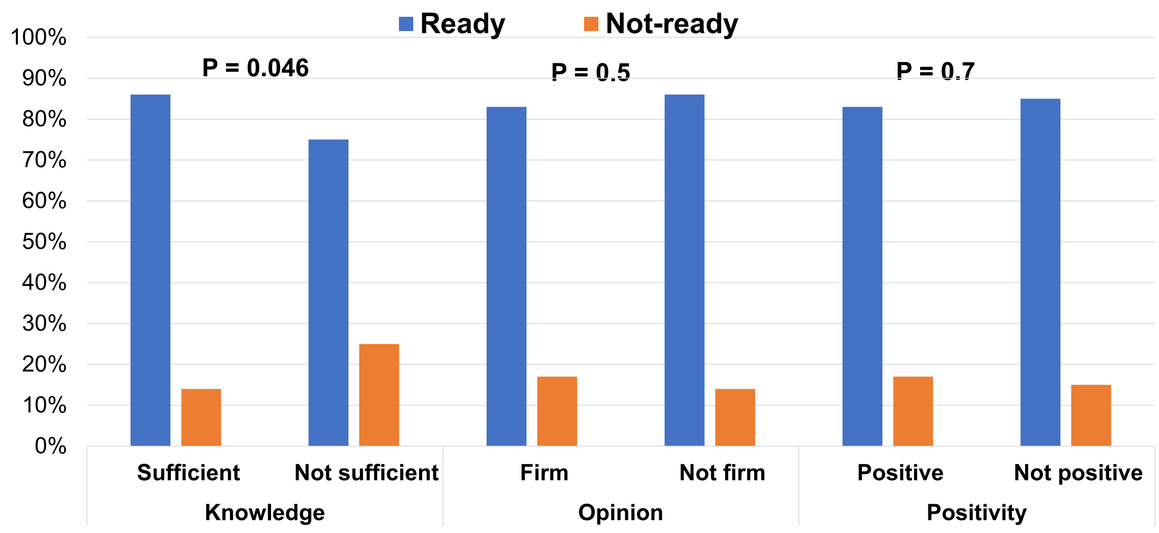

Figure 2. Relationship between readiness, knowledge, and attitude towards epidemiology

Discussion

- Over two thirds of the respondents had a basic knowledge regarding epidemiology, unlike the findings of a Pakistani study (n = 800 undergraduate pharmacy students).[4]
- Half of the respondents preferred the inclusion of calculations, while the majority preferred the introduction of a Web portal.
- Two thirds of the respondents preferred on-campus teaching and guest speakers.
- Almost all respondents considered epidemiology useful for their careers, consistent with the findings of a Pakistani study (n = 126 undergraduate medical students).[5]
- Improved knowledge is significantly associated with a firm opinion and a positive attitude toward learning epidemiology.

Conclusion

- This is the first study investigating health science students' knowledge, attitudes, and readiness to learn epidemiology in the GCC region.
- Further multi-site studies, using validated instruments, should be conducted to assess university student-related factors associated with learning preferences and readiness
- Adequate training in epidemiology improves students' attitudes toward the discipline and provides a clear understanding of career paths.
- Epidemiology educators can tailor course design by identifying key determinants such as prior coursework and content preferences.

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