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A Comparative Investigation of the Effectiveness of Virtual and In-Person Classroom Settings in Nutrition Education

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INTRODUCTION

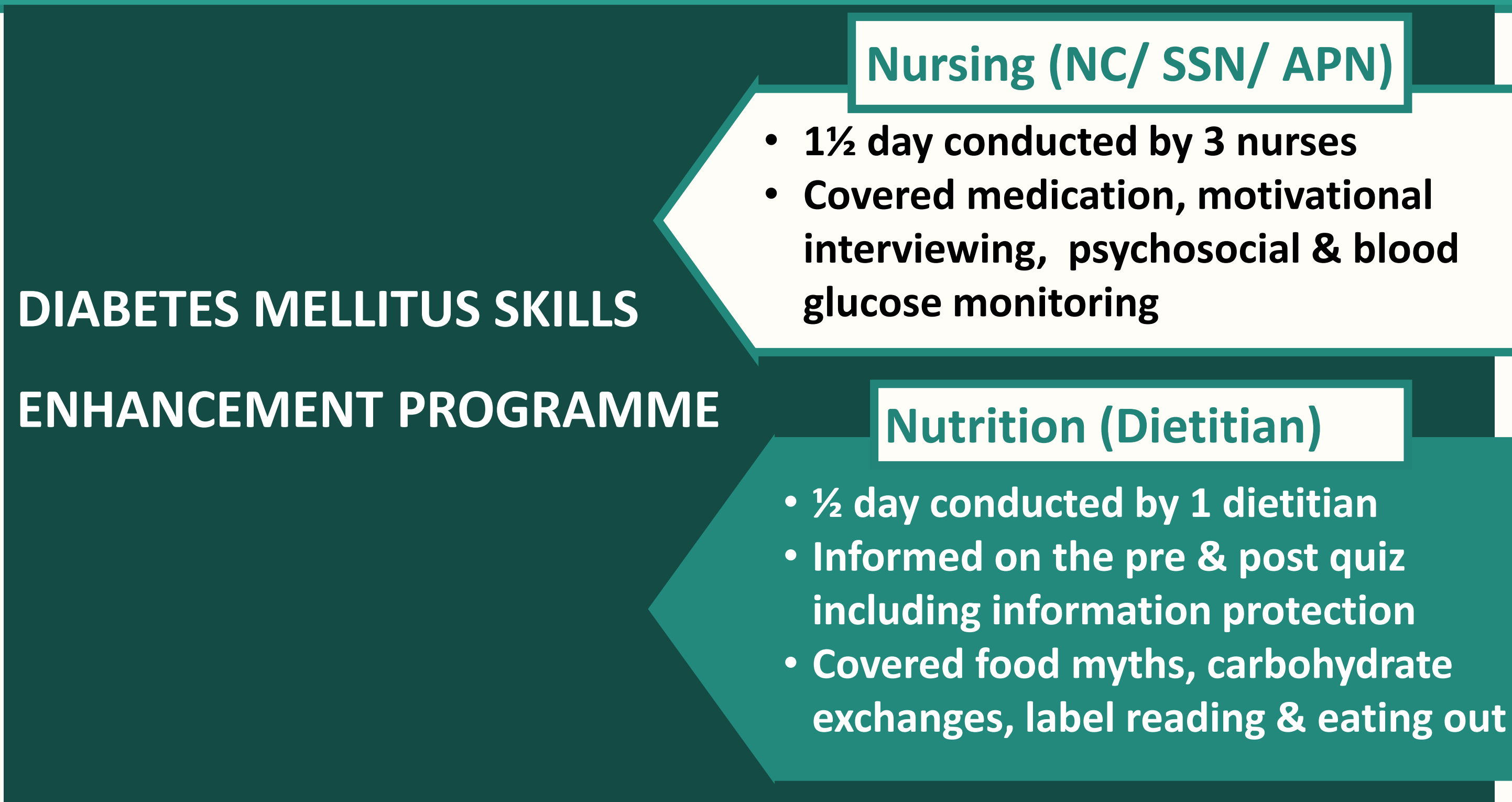
Nurses play an integral role in healthcare. They act as liaison between patients and the doctors, as well as allied health professionals. They counsel and educate patients with the purpose of achieving good clinical outcomes for them. Hence, it is imperative that efforts and investments are spent on developing this important human resources in healthcare to provide better and safer care for our patients.

Diabetes Management Skills Enhancement Program (DM-SEP) is a two-day in-house course which aims to equip SingHealth Polyclinics (SHP) nurses with knowledge and skills on diabetic management, so as to empower them in counseling patients with diabetes. This two-day learning programme which utilizes interactive simulations runs bi-annually. It consists of didactic teaching and hands-on experiential learning on diabetic nutrition education. As a safety precaution against spread of COVID-19 infection, In-person DM-SEP training was replaced with virtual training. However, the effectiveness of a virtual DM-SEP course versus in-person training has not been evaluated.

OBJECTIVES

Compare the effectiveness of virtual DM-SEP versus in-person training in improving participants' knowledge on nutrition education.

METHODOLOGY



Data Collection

- Response to a 5-item questionnaire on nutrition were collected via online survey prior to and after the DM-SEP workshop
- Demographics were also collected

Data Analysis

- Assessment of knowledge differences between the group by Mann Whitney U test
- Assessment of knowledge improvement within the group by Wilcoxon signed rank test

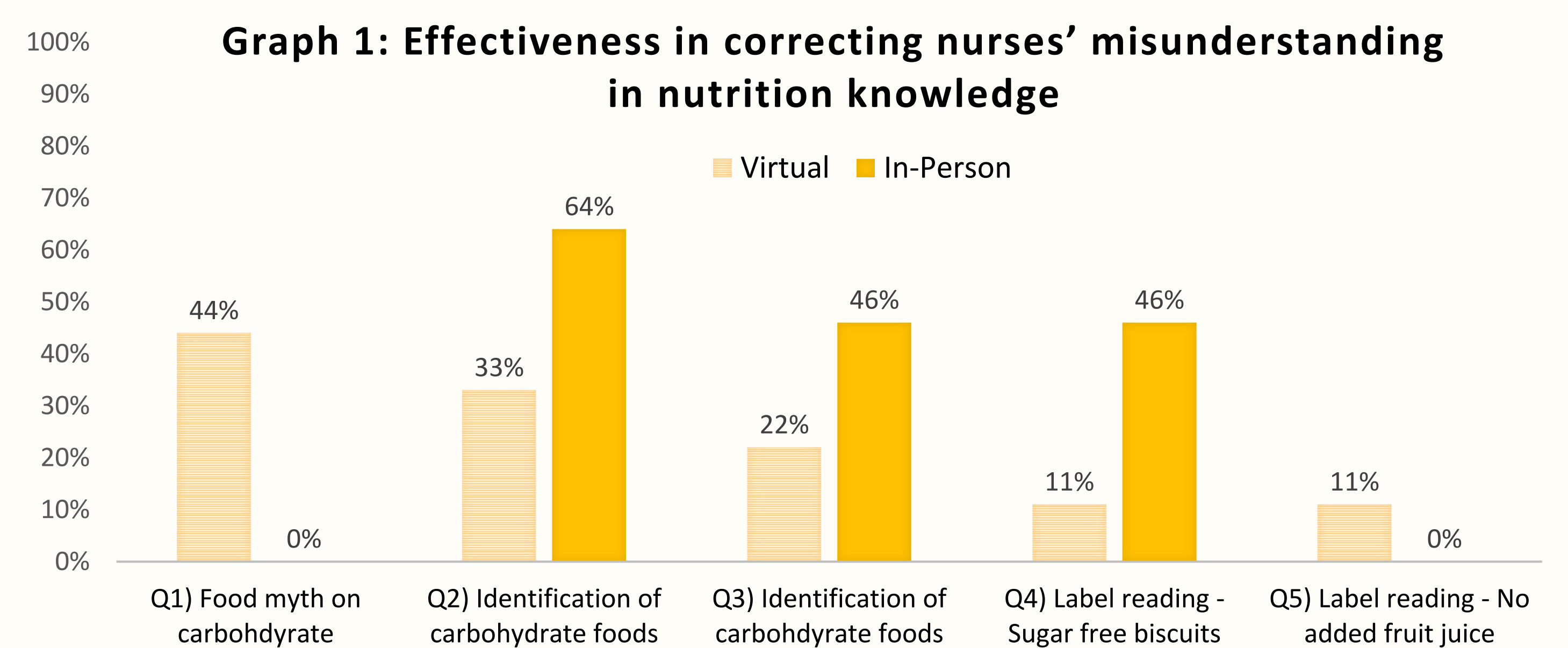
RESULTS

- A total of 20 nurses (9 virtual vs 11 in-person) participated in this study.

Demographics	Virtual (n= 9)		In-person (n = 11)	
	N	%	N	%
Age (years)				
21 – 30	3	33.3	7	63.6
31-40	5	55.6	3	27.3
41-50	1	11.1	0	0
> 50	0	0	1	9.1
Qualification				
Diploma	3	33.3	7	63.6
Degree	6	66.7	4	36.4
Experience				
< 1 yr	0	0	1	9.1
1 to < 5 yrs	0	0	3	27.3
5 to 10 yrs	3	33.3	4	36.4
10 to 15 yrs	2	25	2	18.2
> 15 yrs	4	41.7	1	9.1

Table 1: Demographics of participants

- There was no significant difference in effectiveness of learning by the participants in both in-person and virtual groups ($p=0.549$), though in-person teaching had a greater improvement compared to the virtual group [In-person 2(1-2) vs Virtual 1 (0-2)] (Graph 1). 100% of the nurses who did the virtual group have 5 or more years of working experience, while more than one third of the other group had less than 5. Subject characteristics such as working experience and educational level could have affected this outcome.



- When compared to their own groups, participants showed an improvement in their nutrition knowledge after attending the virtual ($p=0.026$) and in-person ($p=0.009$) nutrition workshop (Table 2).

	Total Pre score	Total Post score
Virtual	4 (2.5-4.5)	5 (4-5)
In-person	3 (2-4)	4 (4-5)

Table 2: Pre- and post-scores within virtual and in-person groups

CONCLUSION

- A virtual nutrition education is equally effective to one that is conducted in-person in improving nutrition knowledge for SHP nurses. The results of the study are reassuring as it provides evidence that essential training can still be carried out safely in spite of an ongoing pandemic environment. It also provides evidence that the training on nutrition by dietitians has effectively enhanced nurses' knowledge in providing health education to their patients.

LIMITATIONS & RECOMMENDATIONS

- This retrospective study had a small sample size and limited demographic differences.
- Future studies could use larger sample sizes and/or conduct them in a randomised controlled setting with validated nutrition questions.