

Introduction

Intrinsic motivation positively correlates with a higher quality of life and academic achievement in medical students.^{1,2} Self-Determination Theory (SDT) posits that individual's needs for autonomy, relatedness, and competence create their intrinsic motivation.³ A Clinical Skills Course teaches medical students to interact with patients and colleagues (relatedness), refine clinical skills (competence), and develop towards independent medical practice (autonomy). Thus, these clinical skills classes appeal to feelings of autonomy, competence, and relatedness, and could improve intrinsic motivation. The primary goal of this study is to determine if a clinical skills course affects medical students' feelings of autonomy, competence, and relatedness and therefore their intrinsic motivation.

Aims and Objectives

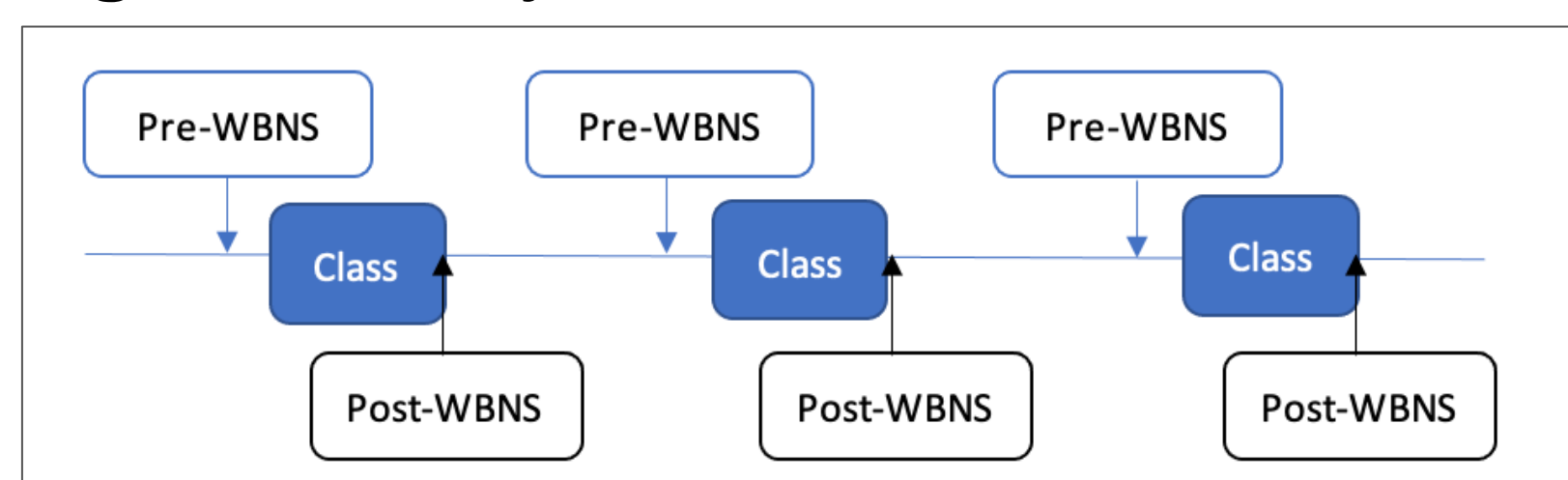
Aim: To investigate the relationship between a clinical skills course and medical student motivation

Objective: Collect student ratings of autonomy, competence, and relatedness before and after a clinical skills classes over the course of a semester

Methods

An experience sampling methodology was used to examine changes in intrinsic motivation over the course of multiple clinical skills classes. Beginning in August 2020, MS-1 and MS-2 students were emailed the Work-Related Basic Need Satisfaction Scale (WBNS) adapted to medical students on Mondays prior to select classes (non-examination classes involving standardized patient interviews or physical exam practice) (Fig. 1).⁴ The same survey was emailed immediately after the class ended (Fig. 1).

Figure 1. Survey Distribution Timeline



This resulted in a sample of 33 participants who completed a total of 65 pre-surveys and 87 post-surveys across three class sessions. A lagged endogenous change model and paired t-tests were used to analyze the findings. This study was been approved by the Oakland University IRB. IRB-FY2020-18

Results

Table 1. Lagged endogenous change model across the semester using three distinct models.

	Autonomy		Competence		Relatedness	
	Estimate	SE	Estimate	SE	Estimate	SE
Pre-scores	0.61*	0.11	0.80*	0.08	0.83*	0.09
Class	-0.62	0.49	0.75**	0.39	0.14	0.18
Class* Pre-Scores	0.16	0.14	-0.19*	0.09	-0.04	0.05

Results of the affect that Pre-Scores, the class session, and the interaction between APM class and Pre-scores had on Post-Scores. Note: *p<0.05, **p<0.1

Competence Across the Semester Using the Lagged Endogenous Change Model

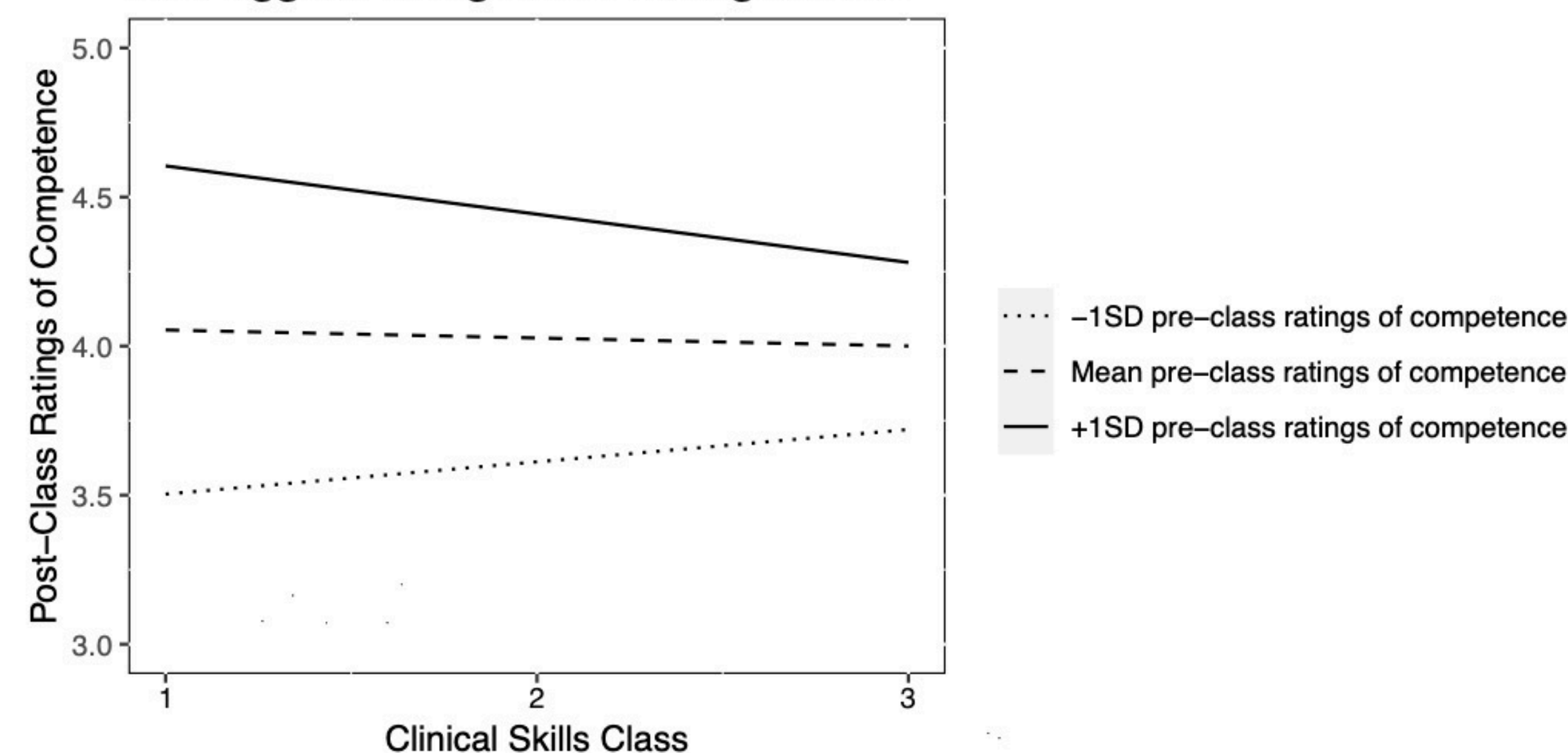


Figure 2. Graphic description of the relationship between pre- and post-ratings of competence across the semester using the lagged endogenous change model. SD = standard deviation

Table 2. t-tests of individual classes.

	autonomy	competence	relatedness
Class 1	t(21) = 1.27, p = 0.21	t(21) = 1.48, p = 0.15	t(21) = 1.65, p = 0.11
Class 2	t(16) = 2.51, p = 0.02*	t(16) = 0.83, p = 0.41	t(16) = 1.51, p = 0.15
Class 3	t(9) = -1.71, p = 0.12	t(9) = -0.64, p = 0.53	t(9) = 0.59, p = 0.56

*p<0.05

The lagged endogenous change model showed that across the semester, when controlling for pre-class need satisfaction ratings, class events had a significant ($p < 0.10$) and positive effect on post-ratings of competence ($b = 0.75$, $SE = 0.39$, $p = 0.056$). People with one standard deviation lower of pre-class ratings of competence increased in competence need fulfillment over time. Nine t-tests were conducted, each for a specific class and the three components of intrinsic motivation. Across three class sessions, the second session had a significant, positive relationship with autonomy ($t(16) = 2.51$, $p < 0.05$, $[0.47, 0.04]$).

Conclusions

A significant increase for an isolated class session was only seen in autonomy at time two. However, considering a lagged endogenous change model, we do see a general compounding increase in competence due to classes across the semester. This affect was especially true for students with lower pre-ratings of competence. This could imply that clinical skills classes are more effective at increasing medical student intrinsic motivation if the students feel less competent. This knowledge could be used to tailor clinical skills courses to best benefit individual student learning and intrinsic motivation. COVID-19 regulations and online classes could also have moderated the relationship between classes and intrinsic motivation as the study was originally intended to investigate the effects of in-person instruction.

Class sessions in a clinical skills course have both a distinct and compounding effect on medical student motivation. The effect on medical student post-ratings of competence is especially influenced by pre-ratings of competence. This study highlights the importance of clinical education for medical students during their didactic years of medical school and the impact it can have on their motivation in general and when course work is delivered online.

References

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