Using Video Modules and Simulation Learning to Improve IUD Counseling Among Internal Medicine Residents—a Randomized Controlled Educational Trial

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INTRODUCTION

IUDs are considered first-line contraceptive options according to primary care, gynecology, and pediatric guidelines; however, a lack of knowledge about long-acting reversible contraceptives (LARCs) negatively impacts considerations to use these methods in clinical practice, especially if a clinician does not have the confidence to counsel on risks versus benefits.¹ In the USA, internal medicine (IM) trainees do not have consistent education and exposure specifically on the skills needed to comprehensively counsel on IUDs.^{2, 3}

Video modules are alternative educational strategies that are effective in teaching residents' new clinical content.^{4–6} We sought to assess whether a hands-on curriculum, in addition to video modules, would make a difference in knowledge, counseling, and referral practices among providers expected to counsel patients on IUDs.

We designed a novel curriculum to improve IM residents' perceived comfort in counseling on IUDs by combining a hands-on IUD simulation workshop using IUD demo devices, in combination with video modules and compared with traditional lecture-based education. Our primary outcome was change in self-reported comfort and ability to counsel about IUDs. Secondary outcomes were change in knowledge about IUD and the number of self-recorded referrals made for IUD placement in the years following this intervention.

METHODS

Residents randomized into the control group received a traditional 1-h didactic lecture on contraceptive care. Residents randomized into the intervention arm received the novel curriculum composed of three parts: (1) a 1-h video module which reviewed basic concepts in contraceptive care, (2) a 7-min mock patient video module which simulated a patient-provider interaction about IUD counseling, and (3) an experiential hands-on simulation workshop in which residents learned to place IUDs on plastic pelvic models. In total, 81

first year residents were eligible to participate in the study, and all were enrolled and were randomized.

All participants completed pre-intervention surveys that included two parts: (1) the knowledge portion that consisted of 13 knowledge-based questions about IUDs and (2) a five-question attitude and behavior survey that rated their confidence in their ability to counsel about IUDs on a 5-point Likert scale.

Post-intervention surveys were collected 2.5 years after the intervention. The first survey assessed their knowledge on the same 13 knowledge-based questions about IUDs that was completed their intern year. The second survey reported on the same five-question attitude and behavior survey assessing their self-reported confidence in their ability to counsel about IUDs on a 5-point Likert scale. Residents were also asked to report, according to their recollection, the number of times they referred patients for IUD placement.

RESULTS

By 2.5 years of follow-up, 71% ($N = 58$) of the residents completed both the pre- and post-behavior and attitude surveys. Residents who did not complete their surveys were excluded from final analysis. Overall, there was no difference in baseline knowledge between the intervention and control groups. Baseline comfort in counseling about IUDs was similar in both groups at the start of the study period, with a minority of residents feeling very comfortable (4.2% control vs. 2.9% intervention, Table 1). Post-intervention survey data indicated there were more residents in the intervention group that felt somewhat or very comfortable counseling about IUDs (46.7% intervention vs. 27.2% control); however, this outcome was not statistically significant ($p = 0.054$). The percentage of residents referring for IUD placement > 4 times during the 2.5 years of follow-up was also higher overall in the intervention group (24%) compared with the control group (8.6%), but again was not statistically significant ($p = 0.24$).

DISCUSSION

Overall, this study showed that an integrative curriculum may be more successful than a traditional lecture-based curriculum for increasing IM residents' comfort in counseling about IUDs, as well as increasing referrals for IUD placement, though these positive trends did not reach statistical

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Table 1 Comparison of Intervention vs. Control for the Continuous Measures of Pre- and Post-knowledge, Attitudes, and IUD Referral Patterns

Pre-test scores			
	Control (N = 24)	Intervention (N = 34)	p value
Knowledge (mean, SD)	9.3(2.1)	9.2 (1.7)	0.81
Self-reported comfort in counseling (N, %)			0.53
• Very uncomfortable	3 (12.5)	7 (20.6)	
• Somewhat uncomfortable	10 (41.7)	14 (41.2)	
• Neutral	6 (25.0)	7 (20.6)	
• Somewhat comfortable	4 (16.7)	5 (14.7)	
• Very comfortable	1 (4.2)	1 (2.9)	
Post-test scores and behaviors			
	Control (N = 23)	Intervention (N = 31)	p value
Knowledge (mean, SD)	9.0 (1.8)	9.3 (1.7)	0.53
Self-reported comfort in counseling (N, %)			0.054
• Very uncomfortable	1 (4.5)	0 (0.0)	
• Somewhat uncomfortable	6 (27.3)	3 (10.0)	
• Neutral	9 (40.9)	13 (43.3)	
• Somewhat comfortable	5 (22.7)	12 (40.0)	
• Very comfortable	1 (4.5)	2 (6.7)	
Reported referrals for IUDs (2.5 years after intervention)			0.24
• 0	14 (60.9)	11 (44.0)	
• 1–3	7 (30.4)	8 (32.0)	
• 4–10	1 (4.3)	5 (20.0)	
• 11+	1 (4.3)	1 (4.0)	

significance. This study was not powered to show more subtle differences in outcomes between groups. This multimodal curriculum may have a significant impact in counseling confidence and referral patterns if studied on a larger scale. Furthermore, recall biases may impact the number of reported referrals for IUD placement. Given the relatively higher baseline knowledge of the interns, focus of these sessions should include more open-ended discussions about barriers to counseling and referral, as opposed to focusing only on best ways to increase knowledge base.

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Compliance with Ethical Standards:

Conflict of Interest: The authors declare that they do not have a conflict of interest.

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