Patient-reported Perioperative Preparedness, Healthcare Resource Utilization & Wellness for Patients Undergoing Creation of an Intestinal Stoma

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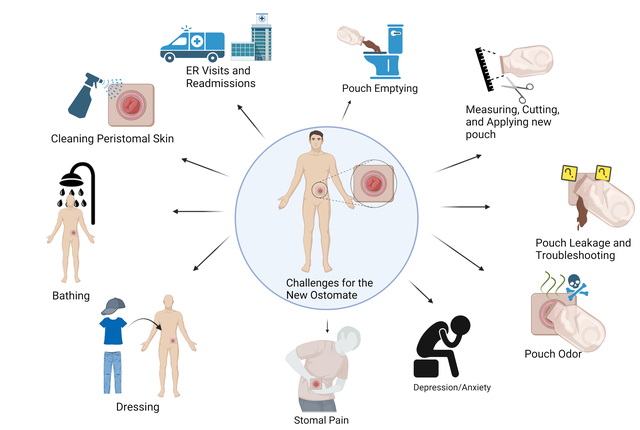
INTRODUCTION



• Over 100,000 patients undergo creation of an intestinal stoma (i.e. colostomy, ileostomy, urostomy) each year in the US which conveys tremendous implications to patient well-being.

• New ostomates are frequent users of the healthcare system. New ileostomy and colostomy patients experience some of the highest 30-day readmission rates among all major surgeries in the US.

• Stoma education programs improve well-being and decrease healthcare resource utilization for new ostomates but the relationship between patient factors, educational effectiveness and patient outcomes is poorly characterized.

• Goals of this study were:
  • To characterize stoma-related, skill-based, educational practices and preparedness for homegoing ostomates transitioning from inpatient care (all patients)
  •To identify early patient-reported outcomes and resource utilization needs for outpatients with new stomas (all patients)
  •To determine associations between patient/educational factors (e.g. kit use, among others) with patient-reported outcomes and resource utilization for new homegoing ostomates

METHODS

• Retrospective analysis of assessments from 1178 ostomates in conjunction with the American College of Surgeons Ostomy Home Skills Kit program (ACS OHSK).

• Composite Confidence Score (CSS) and Composite Problem Score (CPS) created to characterize each patient's confidence with stoma care skills and early post-operative stoma-related problems.

• Associations between patient factors, CCS, CPS, and healthcare resource utilization were determined in the early postoperative period using univariate and multivariate logistic regression modelling.

RESULTS

	All Stomas (n = 1178)	Colostomy (n = 558)	Ileostomy (n = 399)	Urostomy (n = 202)	Unsure Ostomy Type (n = 19)	Significant p-values
Age in Years, Median (IQR)*	67.0 (57.0-74.0)	66.0 (56.0-74.0)	64.0 (53.0 – 72.0)	71.0 (67.0-77.0)	70 (60.0-73.0)	<0.001[2] <0.001[4]
BMI in Kg/m^2, Median (IQR)*	25.7 (22.4-29.7)	25.6 (22.6-29.6)	25.6 (21.6-29.8)	25.8 (23.1 – 28.9)	25.4 (20.3-28.7)	nil
Male Gender, % (n)**	49.6 (593)	43.1 (239)	45.7 (180)	74.4 (148)	55.6 (10)	<0.001[2] <0.001[4]
Race, % (n) ** White, Non-Hispanic	90.6 (1068)	88.3 (481)	93.4 (368)	92.3 (179)	77.8 (14)	0.008[1] 0.013[5] 0.04[6]
Preop Stoma Site Marked, % (n)**	74.8 (1088)	65.9 (306)	77.4 (281)	92.5 (173)	80.0 (12)	<0.001[1] <0.001[2] <0.001[4]
Stoma Kit Usage, % (n)**	90.3 (1102)	92.1 (513)	88.0 (351)	90.6 (183)	89.5 (17)	0.03[1]
Highest Level of Education, % (n)** 4-year college degree or more	34.6 (407)	31.4 (171)	36.0 (140)	42.3 (82)	27.8 (5)	0.006[2]
Postoperative Days in the Hospital Median (IQR)*	6 (4-10)	6 (4-10)	6 (4-10)	7 (5-9)	6.0 (4.5-12.0)	nil
Ostomy Education Received During Admission in Hours, Median (IQR)*	2.0 (1.0-3.0)	1.5 (1.0-3.0)	2.0 (1.0-3.0)	2.0 (1.0-3.0)	0.5 (0-2.25)	nil
Ostomy Nurse Meetings during Admission, Median (IQR)*	2.0 (1.0-3.0)	2.0 (1.0-3.0)	2.0 (1.0-3.0)	2.0 (2.0-3.0)	2.0 (1.0-2.0)	nil
Composite Confidence Score, Mean Score** [Standard Deviation] (n)	11.6 [5.0] (938)	11.3 [5.0] (422)	12.2 [4.6] (320)	11.8 [4.9] (149)	9.7 [7.5] (15)	0.007[1] 0.047[5]
Composite Problem Score, Mean** [Standard Deviation] (n)	15.3 [8.5] (1015)	15.5 [8.6] (466)	16.1 [8.5] (337)	13.4 [7.4] (169)	17.1 [11.8] (15)	0.005[2] <0.001[4]
Worried About Caring for Self, Mean Score* [Standard Deviation] (n)	0.31 [0.46] (1151)	0.32 [0.47] (524)	0.31 [0.46] (382)	0.31 [0.46] (192)	0.39 [0.50] (18)	nil
Feeling Sad and/or Depressed, Mean Score* [Standard Deviation] (n)	0.24 [0.43] (1163)	0.24 [0.43] (531)	0.26 [0.44] (385)	0.18 [0.38] (195)	0.39 0.50] (18)	0.03[4]

Table 1: Patient and Stoma Characteristics

	[1]Low Confidence with Ostomy-Related Skills (n = 416)	[2]High Confidence with Ostomy-Related Skills (n = 522)	p-value	Multivariate Analysis: Predictors of High Confidence OR (95% CI; p value)
Age in Years, Median (IQR)	69.0 (60.0-75.0)	63.0 (53.0-71.0)	**<0.001**	**0.97 (0.95-0.98; <0.001)**
BMI, Kg/m^2, Median (IQR)	25.6 (21.9-29.3)	25.8 (22.7-30.1)	0.56	
Male Gender, % (n)*	43.7 (176)	56.4 (289)	**<0.001**	**1.64 (1.04-2.59, 0.03)**
White, Non-Hispanic Ethnicity, % (n)*	91.4 (362)	89.0 (453)	0.23	
Ostomy Education Received During Admission in Hours, Median (IQR)	1.0 (1.0-2.0)	2.0 (1.0-3.0)	**<0.001**	
Ostomy Nurse Meetings during Admission, Median (IQR)	2.0 (1.0-3.0)	2.0 (2.0-3.0)	**<0.001**	1.00 (0.93 – 1.06; 0.95)
Composite Problem Score, Mean Score [Standard Deviation] (n)	19.04 [8.09] (349)	12.54 [7.64] (460)	**<0.001**	**0.92 (0.89-0.95; <0.001)**
Ostomy Kit Usage, % (n)	87.0 (354)	94.4 (490)	**<0.001**	Usage of kit (yes): 1.6 (0.79-3.29; 0.20)
Postoperative Resource Utilization Within First Two Weeks After Operation				
Number of Home Care Nursing Visits, Mean (Standard Deviation)	3.56 (3.19)	2.28 (2.42)	**<0.001**	**0.87 (0.80-0.95; <0.001)**
Need for Phone Call to Surgeon, % (n)*	43.2 (118)	34.8 (118)	**0.03**	0.94 (0.79-1.11; 0.49)
Need for an ER visit due to Ostomy, % (n)*	21.2 (52)	14.6 (46)	**0.04**	
Number of Physician Evaluation encounters, Mean (Standard Deviation)	1.69 (2.11)	1.33 (1.80)	**0.04**	
Overall Satisfaction with Care, Mean Rating (Range = 0-3)	2.13	2.64	**<0.001**	**3.11 (2.16-4.56; <0.001)**

Table 2: Patient and Stoma Characteristics by Confidence Level

• In the two weeks after surgery, 77% of patients needed a home care nurse visit, 18% needed to visit the ER, and 61% needed to visit their surgeon. The mean care satisfaction rating was 2.49 (Range 0-3)

• Over half of respondents reported as having a permanent stoma, however nearly 15% of overall respondents were uncertain of their stoma's intended permanency

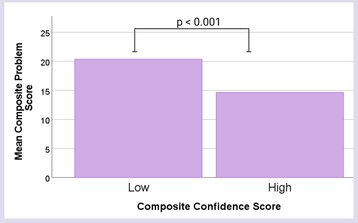
• Among the skills evaulated, patients were most confident emptying their pouch (61% were confident or very confident), and least confident troubleshooting a leaking pouch (26%). Among the problems evaluated, patients most frequently reported frequently feeling uncomfortable leaving home (32%).

• On multivariate analysis, patients with low problem scores had higher confidence scores, fewer home care nursing visits, fewer ostomy nurse visits, and higher overall care satisfaction (p < 0.05 for all)

• On multivariate analysis, patients requiring physician rescue had more home care nursing visits and more need for an ostomy nurse visit (p < 0.05 for both)

• Patients who reported high overall satisfaction with care received more hours of inpatient ostomy education (median 2 vs 1 hours) more inpatient ostomy nurse meetings (median 2 vs 1), had higher CCS (12.0 vs 7.6), lower CPS (14.5 vs 23.9), and were more likely to have used the ACS OHSK (92.8 vs 70.8%). (p < 0.001 for all)

•Patients who used the ACS OHSK had higher CCS (11.9 vs 9.4, p <0.001), lower CPS (15.1 vs 18.3, p < 0.001), and higher satisfaction scores (2.5 vs 1.8 (range 0-3) p < 0.001)



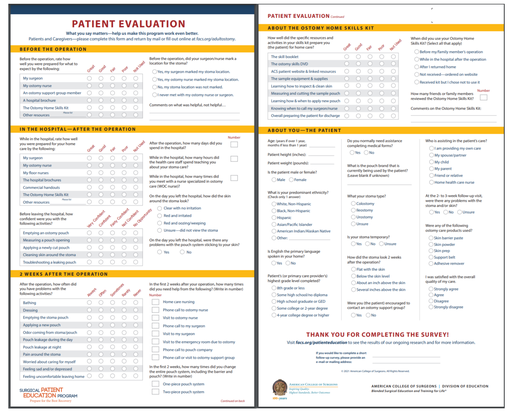
CONCLUSION

• Ostomy related problems are common, and healthcare utilization is high among this population

• Perioperative stoma education should focus on establishing confidence and technical proficiency through "hands-on" skills-based training, rather than verbal or text-based didactic resources to achieve optimal outcomes

• Women and older patients may require tailored stoma education strategies to overcome disparities in stoma care confidence

American College of Surgeons Home Ostomy Kit



Patient Assessment Form

ACKNOWLEDGEMENTS

We would like to thank the American College of Surgeons Division of Education for providing data and collaborating on analysis

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