What Most Satisfies Emergency Department Patients?

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Novometric analysis[1,2] is used to determine aspects of care which induce greatest satisfaction among Emergency Department (ED) patients. Data were obtained from a satisfaction survey with responses obtained using five-point Likert-type scales. The first analysis discriminated 1,045 strongly satisfied and 671 moderately satisfied patients, and the second analysis discriminated 1,012 patients very likely and 584 patients moderately likely to recommend the ED to others. Maximum satisfaction was associated with amount of attention nurses paid to patients, and maximum likelihood of recommending the ED was associated with physician concern for patient comfort.

This study identifies phenomena which maximize overall satisfaction of ED patients, and which maximize the likelihood of an ED patient recommending the ED to others. Set in an urban 800 bed university-based level 1 Trauma center, discharged patients were mailed a survey assessing their satisfaction with care received in the ED one week after discharge.[2] The survey elicited ratings of overall satisfaction with care received, likelihood of recommending the ED, and satisfaction with aspects of administration, nurse, physician, laboratory, and care of family/friends.

Maximum Satisfaction

A total of 2,198 surveys (completed using a five-point Likert-type response scale) were returned over a six-month period. Analysis included 1,716 patients responding with satisfaction ratings of 4 (good, N=671) or 5 (very good, N=1,045). Structural decomposition analysis[1] (SDA) identified three attributes for inclusion in CTA: amount of attention nurses paid to patient; nurse concern to keep patient informed regarding treatment; and helpfulness of triage nurse. The minimum denominator search algorithm[1] (MDSA) identified a descendant family of three unique CTA[3] models within which the globally optimal[1] (GO) model resides, and exact discrete 95% confidence intervals[1] (CIs) were computed for model and chance classification performance. Models 1 and 2 used all three ratings, and model 3 used ratings of nurse attention (see Table 1).

Comparison of 95% CIs for model and error performance indicates all three models achieved statistically reliable classification.

Comparison of model 95% CIs reveals the ESS (accuracy) was statistically comparable across all three models. Comparison of model 95% CIs also reveals the efficiency (parsimony)

obtained by model 3 was significantly greater than was achieved by models 1 and 2 (which had comparable efficiency). The efficiency of model 3 is 56.4% of theoretical ideal.[1]

Table 1: Summary of MDSA Procedure for Discriminating Patients who are Very versus Moderately Satisfied

Step	Strata	MinD	ESS	Efficiency
1	6	36	58.9	9.81
			53.9-63.8	8.98-10.6
			0.16-5.31	0.03-0.88
2	5	37	57.8	11.6
			52.8-62.5	10.6-12.5
			0.28-5.10	0.06-1.02
3	2	769	56.4	28.2
			51.5-61.1	25.8-30.6
			0.21-5.03	0.11-2.52

Note: There were three steps in this MDSA. Strata is the number of partitions identified by the CTA model. MinD is the smallest number of observations (patients) in any of the strata (i.e., the smallest model endpoint N). ESS is a normed index of classification accuracy on which 0 represents the level of accuracy expected by chance and 100 represents perfect (errorless) classification. By rule-of-thumb: ESS<25 is a relatively weak effect; ESS<50 is a moderate effect; ESS<75 is a relatively strong effect; and ESS>75 is a very strong effect.[4] Efficiency, an index of parsimony, is ESS/number of strata. Under the ESS and Efficiency point estimates, the first row is the exact discrete 95% CI for the model, and the second row is the corresponding 95% CI for chance.

Figure 1 presents the elemental GO two-strata UniODA[4,5] model 3. As seen, to increase the number of very satisfied patients, and reduce the number of moderately satisfied patients, the model indicates nurses should maximize the number of patients rating nurse attention as being "very good", and minimize the number of patients rating nurse attention as being "good" or worse. Recent research discriminating very satisfied versus very dissatisfied ED patients[1], and discriminating very dissatisfied versus

moderately dissatisfied patients[6], identified physician explanation of patient illness/injury as the critical attribute. However, the present research suggests that the critical attribute in discriminating very satisfied versus moderately satisfied ED patients is the amount of attention the nurse paid to the patient. Indeed, presently SDA indicated that the three attributes which are important in identifying the GO model for the latter discrimination application all involve nurse ratings.
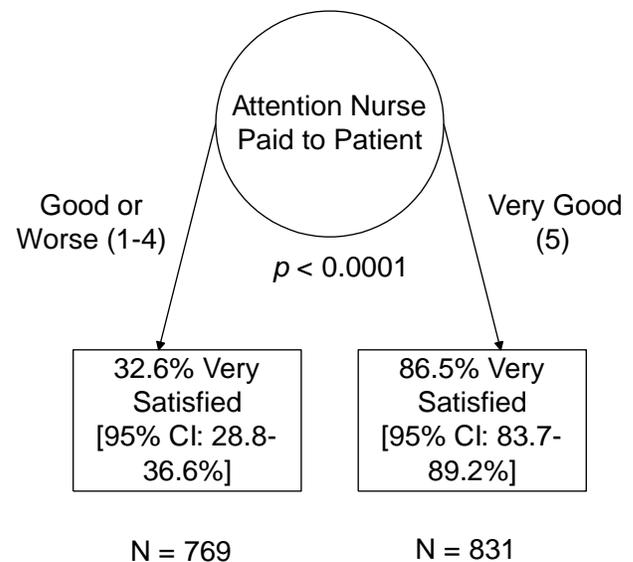

Figure 1: Two-Strata Model for Discriminating Patients who are Strongly versus Moderately Satisfied with Care Received in the ED

Considered as a whole this research suggests that a combination of very good physician explanation of patient illness/injury, coupled with very good nurse attention paid to patient, will minimize dissatisfaction and maximize satisfaction.

Maximum Recommendation Likelihood

Analysis included 1,596 patients responding with recommendation ratings of 4 (good, N=584) or 5 (very good, N=1,012). SDA

identified three attributes for inclusion in CTA: physician concern for patient comfort during treatment; physician explanation of tests and treatment; and physician explanation of patient illness/injury. The MDSA identified a descendant family of four unique CTA models within which the GO model resides, and exact discrete 95% CIs were computed for model and chance classification performance. Model 1 used ratings of physician concern for patient comfort and explanation of test/treatment; model 2 used ratings of physician concern for patient comfort and explanation of illness/injury; model 3 used ratings of physician concern for patient comfort; and model 4 used ratings of physician explanation of illness/injury (see Table 2).

Comparison of 95% CIs for model and error performance indicates all four models achieved statistically reliable classification.

Table 2: Summary of MDSA Procedure for Discriminating Patients who are Very versus Moderately Likely to Recommend the ED

Step	Strata	MinD	ESS	Efficiency
1	4	106	48.6	12.2
			43.1-54.0	10.8-13.5
			0.05-5.02	0.01-1.26
2	4	115	48.6	12.2
			43.1-54.0	6.77-10.1
			0.05-4.94	0.01-1.24
3	2	587	48.3	24.2
			43.0-53.7	21.5-26.8
			0.01-4.90	0.01-2.45
4	2	624	44.9	22.4
			39.3-50.4	19.6-25.2
			0.03-5.01	0.02-2.51

Note: There were four steps in this MDSA. See Note to Table 1.

Comparison of model 95% CIs reveals the ESS (accuracy) was statistically comparable across all four models. Comparison of model 95% CIs also reveals the efficiency (parsimony) obtained by models 3 and 4 was significantly greater than was achieved by models 1 and 2. The efficiency of the GO model 3 is 48.4% of theoretical ideal, and the efficiency of model 4 is 44.8% of theoretical ideal. Figure 2 presents the two-strata elemental UniODA model 3.
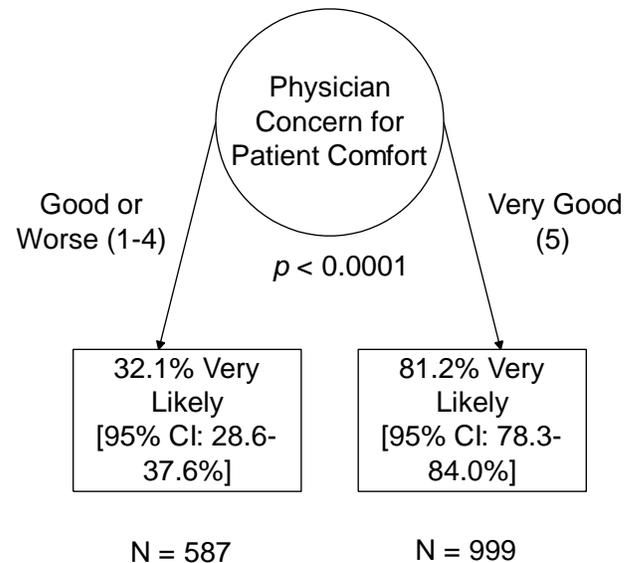

Figure 2: Two-Strata Model for Discriminating Patients Who Are Very versus Moderately Likely to Recommend the ED to Others

As seen, in order to increase the number of patients who are very likely to recommend the ED to others, and to decrease the number of patients who are moderately likely to recommend the ED, the model indicates that physicians should focus on maximizing the number of patients rating physician concern for patient comfort during treatment as being "very good", and minimize the number of patients rating physician concern for patient comfort during treatment as being "good" or worse.

Considered as a whole the research on patient recommendations of the ED to others suggests that a combination of very good ratings of waiting time in the treatment area[7] coupled with very good physician concern for patient comfort during treatment, will maximize the

number of patients who are very likely to recommend the ED to others.

References

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