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Introduction

The continued explosion of information from online social media sites yields a relatively new and exciting data opportunity that can be utilized to better understand elements of the physician-patient interaction that patients consider to be paramount. Already, research has demonstrated that a plastic surgeon’s social media presence can significantly impact the ability to garner patient interest from both treatment and research perspectives. As such, utilizing big data to perform research outlining patient experience with mastopexy, can provide significant benefit in identifying drivers for patient satisfaction, yielding better experiences in an otherwise competitive market and improving overall patient satisfaction. Our research interests involve accessing large volumes of social media data to gain an unbiased understanding of patient sentiment with a goal of improving the patient-physician relationship. Just as 80-95% of patients utilize the internet to learn about cosmetic procedures and inform their choice of surgeon, surgeons can access the information offered on these websites to better understand the patient perspective. This study utilizes reviews from Realself.com to determine and understand the drivers for patient satisfaction in mastopexy. We aim to evaluate the most cited reasons for positive and negative experience and the impact of these factors on overall rating. Lastly, we seek to determine if cost is associated with overall satisfaction. In summary, we are interested in utilizing big data to understand what drives patient satisfaction and how that impacts a Surgeons’ online footprint.

Methods

Patient reviews from the ‘Mastopexy’ category of Realself.com were collected using Scrappy, a python web crawling software that collects textual data from websites. Patient review data includes star ratings 1-5 in overall rating and various subcategories, as well as a free text entry. Each entry was manually reviewed and categorized. Additionally, multiple regression was performed to assess independent predictors of overall satisfaction on the overall experience.

A Big Data Approach To Understanding Patient Satisfaction With Mastopexy

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Results

A total of 968 mastopexy reviews were collected, 85.6% positive and 14.4% negative. The most common reasons for positive experience were aesthetic appearance (66.5%) and good physician bedside manner(21.7%). Similarly, negative reviews also most frequently cited appearance (58.3%) and bedside manner (26.6%). However, several independent predictors of overall satisfaction were identified. Physician bedside manner(p<0.001), after-care follow up(p<0.001), staff professionalism and courtesy(p=0.016) and wait times(p=0.011) were independently associated with a positive overall review. Regarding cost, we also found that patients with a positive review had lower median (\$7,000 vs. \$8,500) and average (\$7,732 vs. \$11,441) cost. However, we found minimal correlation between cost and overall star rating (R²=0.017)

Subcategories (n=411)	Coefficient	P-value
Doctor's bedside manner rating	0.311	<0.001
Answered my questions rating	0.077	0.078
After care follow-up rating	0.118	<0.001
Time spent with me rating	0.051	0.148
Phone or email responsiveness rating	0.017	0.630
Staff professionalism & courtesy rating	0.080	0.016
Payment process rating	0.018	0.601
Wait times rating	0.064	0.011

Table 1. Multiple Regression Analysis for Impact of Subcategories on Overall Rating for Patients Responding to All Subcategories

	Positive Reviews	Negative Reviews
Cost		
Cost given	643	45
No cost given	186	94
Mean	\$7,732	\$11,441
Median	\$7,000	\$8,500
Min	\$1	\$400
Max	\$79,305	\$75,000

Table 2. Comparison of cost associated with positive and negative reviews

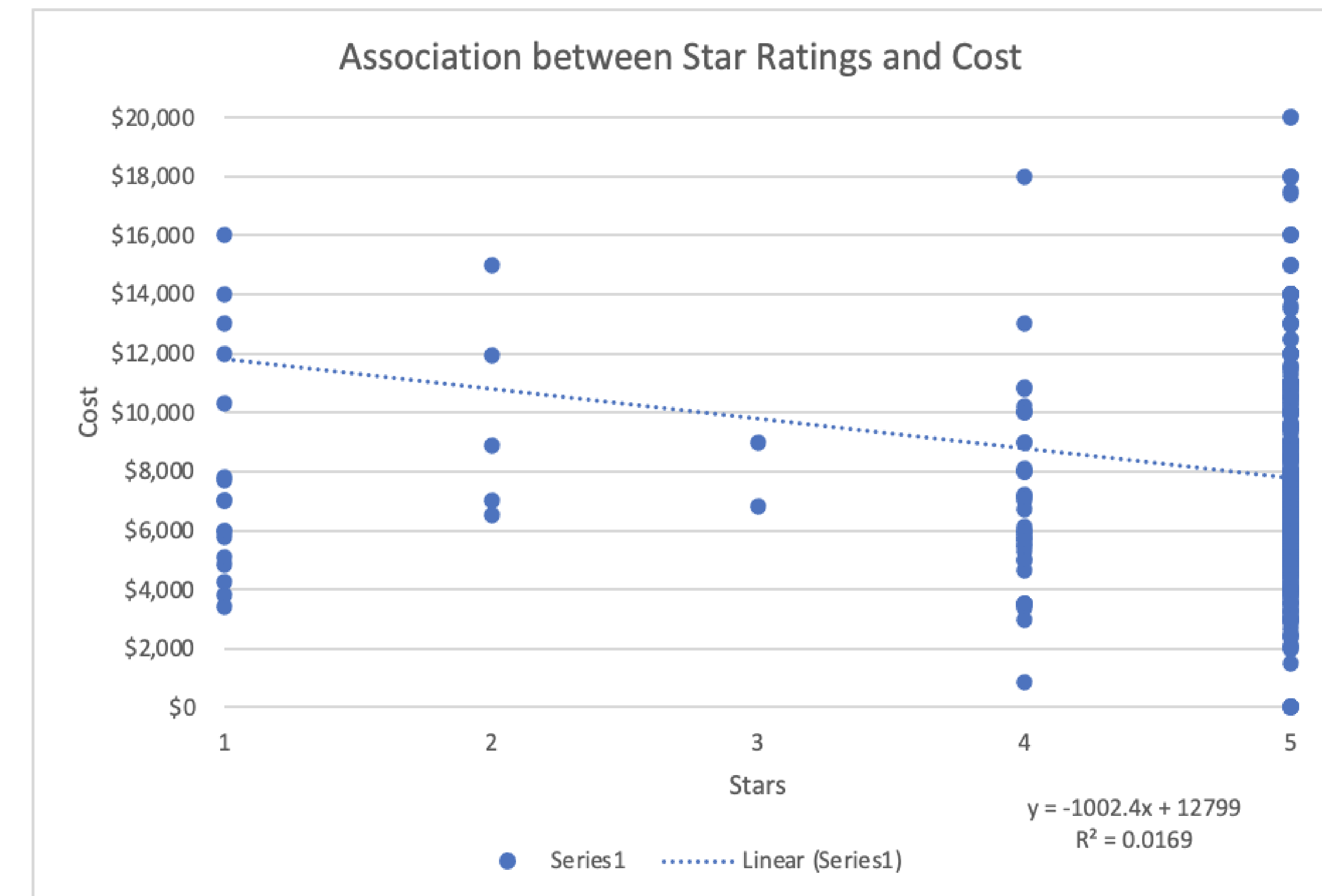


Figure 1. Ordinal regression evaluating the correlation between cost and star rating

Conclusions

Our research demonstrates that aesthetic outcome and bedside manner are the two most prevalent review categories among both positive and negative experiences. Additionally, bedside manner, after-care follow up, staff professionalism and courtesy and wait times are all social components of the patient experience that are independently associated with positive overall reviews. Lastly, there is no significant association between cost and patient satisfaction, but patients undergoing higher cost procedures had lower overall satisfaction rates. All things considered, trends in online aesthetic surgery reviews provide surgeons with important data to help improve their practice and overall patient satisfaction rates. Future research on these predictors utilizing social media big data is both warranted and an exciting opportunity to better understand patient sentiment, concerns, and motivations to undergo plastic surgery procedures.