ABSTRACT
Context and Purpose
Poor medication adherence is a significant health concern. Low-income, uninsured, and underinsured communities are especially vulnerable to this salient health threat. To further understand the suboptimal medication adherence in this population, our cross-sectional study aimed to identify significant predictors of this complex behavior.

Methodology
From July 2015 to December 2015, an anonymous paper survey was distributed to 100 patients in 2 primary health/dental clinics serving uninsured and underinsured patients. Patients who were at least 18 years old, able to read English, and had been prescribed at least 1 medication were eligible. Using 5-point Likert scales, patients reported their health status (1 item), cost of medications (3 items), level of understanding of their diseases and medications (3 items), communication with their healthcare providers (5 items), and level of medication adherence (1 item). Spearman correlation coefficients were used to measure the strength of the relationships between predictors and outcome variables. The predictors were also included in a multiple linear regression model to model medication adherence.

Results
Better health status (P < .001), stopping medications to save for food or rent (P < .001), taking smaller amounts of medications to save cost (P < .001), understanding of condition/disease (P = .027), and provider emphasis on taking medications regularly (P = .003) were significantly correlated with medication adherence. The multiple linear regression model accounted for 29.6% of the variance in medication adherence. In this model, health status (P = .003) and cost (P < .001) were significant predictors.

Conclusions
Our findings suggest that poor health status and the expense of medications discourage medication adherence among uninsured and underinsured patients. Patients’ understanding of their medical conditions and healthcare providers’ emphasis on regular intake of medications, on the other hand, may encourage adherence.

INTRODUCTION
Pharmacologic interventions are available to effectively manage multiple chronic conditions. However, patients should take their medications as prescribed by their health care providers. Thus, poor medication adherence is a significant health concern among patients with costly implications both clinically and economically. Patients who do not have insurance or are underinsured are especially vulnerable populations. Our study included 4 predictor constructs corresponding to the World Health Organization’s Model of Interacting Dimensions of adherence: (1) patient’s health status, (2) medication cost, (3) patient’s understanding of his/her condition(s), and (4) provider communication.

METHODS
Patient Population
Adult patients in 2 clinics in upstate New York were asked to complete anonymous paper surveys. They must have been prescribed at least 1 medication by any provider prior to the date of the survey.

Outcome Measures
Respondents were asked to complete a 24-item, 2-page questionnaire that measured self-reported patient medication adherence as our outcome variable, and general health status, cost of medications, patients’ understanding of their own health, and communication between providers and patients as our predictors.

Study Design and Setting
Our study was a cross-sectional survey. Team members collected data from July 8, 2015 to December 31, 2015. Patients were informed that the survey was anonymous and that completing it would not delay their care or affect the quality of their visit.

Statistical Analysis
Cronbach’s alpha was used to measure the scale reliability of 3 of the independent variables: medication cost, health understanding, and communication. Spearman correlation coefficients were used to measure the strength of the relationships between the 4 predictors and the outcome variable. Multiple linear regression was used to model medication adherence on the 4 independent variables.

RESULTS
Between August and December 2015, a total of 100 surveys were distributed and collected from patients presenting for care at the 2 clinics. Of the 100, a total of 83 respondents, 33 (39.8%) from Clinic A and 50 (60.2%) from Clinic B, were considered eligible. Our respondents were generally adherent to taking their medications (Table 1). Our multiple linear regression model accounted for 29.6% of the variance in medication adherence.

Health Status
Mean reported general health status was 2.99 ± 0.98 (Table 1). Participants who rated their general health status more positively were more likely to self-report better adherence (P < .001; Table 2). General health status was also found to be significantly associated with medication adherence using the multiple linear regression analysis (P = .003; Table 3).

Cost of Medications
Cronbach’s alpha for the 3 cost items was 0.92 (Table 1). The mean of the 3 cost items was 4.03 ± 1.16. Participants rarely stopped or skipped their medications because of cost (P < .001). Skipped medications to save for other things like food or rent (P < .001), and took smaller amounts of medications to make them last longer (P < .001) were less likely to be adherent (Table 2). The mean of the 3 cost items was also found to be significantly associated with medication adherence using the multiple linear regression analysis (P = .001; Table 3).

Health understanding
Cronbach’s alpha for the 3 health understanding items was 0.83 (Table 1). The mean of the 3 health understanding items was 2.40 ± 0.97. This suggests that our sample’s health understanding is very good. Participants’ understanding of their condition or disease was significantly related to medication adherence (P = .027; Table 2). However, the mean of the 3 health understanding items was not significantly associated with medication adherence (Table 3).

Provider communication
Cronbach’s alpha for the 5 communication items was 0.72 (Table 1). The mean of the 5 communication items was 2.31 ± 0.57, suggesting that the participants received a good amount of information about their medicines and conditions from their providers. Participants were more likely to adhere to their medication regimens when their providers emphasized the importance of taking their medications regularly (P = .003; Table 3). However, the mean of the 5 communication items was not significantly associated with medication adherence (Table 3).

CONCLUSION
Medication adherence appears to be positively associated with general health status, patients’ understanding of their condition/disease, and the extent to which providers emphasize the importance of taking medications regularly, and negatively associated with cost. Physician assistants and other providers should prescribe most affordable medications, refer their low-income patients to programs that help pay for their medications, educate them about their diseases, and discuss with them the importance of taking their medications as prescribed. Exclusion of therapy-related barriers was a limitation. Qualitative studies may be useful in exploring other unknown predictors.