

NOSE application in Brazil

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ABSTRACT

OBJECTIVE:

Assess disease-specific quality of life outcomes after nasal septoplasty in adults with nasal obstruction in Brazil.

DESIGN, SETTINGS, AND PATIENTS:

Prospective observational outcomes study in a tertiary hospital to evaluate patients with nasal obstruction due to nasal septal deviation whose failed to medical treatment and underwent septoplasty.

METHODS:

Enrollment period was June 1, 2008, through March 23, 2009. 46 patients with chronic nasal obstruction due to nasal septal deviation with or without inferior turbinate hypertrophy lasting 12 months and persistent symptoms after a 8-week trial of medical management answered the NOSE questionnaire before and 3 months after surgery.

RESULTS:

Patients shown improvement in NOSE score three months after surgery (md=75, IQR=26 vs. md=10, IQR=20) (P<0.001) and a correlation between preoperative NOSE score and outcome three months after surgery (r=-0.789, p<0.001).

CONCLUSIONS:

Cross-cultural adaptation and validation process demonstrated to be valid and the translated Portuguese version of NOSE proved to be applicable in Brazil. Nasal septoplasty showed significant improvement in disease-specific quality of life.

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INTRODUCTION

Nasal obstruction is defined as a sensation of blockage or insufficient airflow through the nose. It could impact significantly the quality of life (QoL) of patients. The prevalence of nasal obstruction was estimated at 26,7% in urban citizens [1]. There are many etiologies for nasal obstruction, such as rhinitis, adenoid hypertrophy, turbinate hypertrophy and nasal polyps. Nasal septal deviation is a common cause of nasal obstruction. Its diagnosis is very easy and its definitive treatment evolve septoplasty surgery.

There is a disease-specific QoL instrument to evaluate the outcome of an intervention in nasal obstruction: the NOSE questionnaire[2]. Many prior reports had been published evaluating patients' subjective outcome after septoplasty with non-validated instruments [3-5], until Stewart MG et al published the validation of NOSE (Nasal Obstruction Symptom Evaluation Scale) in 2004[2]. Disease-specific QoL questionnaires are an important way to assess the impact of a disease or its treatment on patients. The process of cross-cultural adaptation and validation of the disease-specific QoL instrument in to Portuguese with participation of the author of English version is essential prior to its use in a foreign language. This was an essential step after applying QoL questionnaires developed and validated in a foreign language.

Some Brazilian studies have been evaluating outcomes for surgery for nasal obstruction, but none of these used a disease-specific instrument to evaluate nasal obstruction [6, 7]. The aim of this report is to describe validation process and prospectively evaluate the outcome of patients with nasal septal deviation 3 months after septoplasty with or without turbinectomy.

METHODS AND MATERIALS

Prospective observational study performed at Clinics Hospital of the University of São Paulo after IRB approval (0521/08). All patients signed informed consent and were consecutively enrolled from June 1, 2008, to March 31, 2009. Inclusion criteria were: Patients with nasal obstruction due to nasal septal deviation with or without inferior turbinate hypertrophy compatible with chronic nasal obstruction; symptoms lasting 12 months; persistent symptoms after a 8-week trial of medical management including topical nasal steroids, and oral antihistamine-decongestant combinations for patients with concurrent allergic rhinitis; surgery indication for septoplasty; age of at least 18 years. Exclusion criteria were: sinonasal malignancy; radiation therapy to the head and neck; septoplasty performed with rhinoplasty, or as an access to other sites; prior nasal surgery; chronic rhinosinusitis (using the EP3OS definition [8]); septal perforation; craniofacial syndrome; anterior nasal trauma or fracture; adenoid hypertrophy; sarcoidosis; granulomatosis of the nasal cavity; uncontrolled asthma; pregnancy.

Cross-cultural adaptation process of the NOSE instrument was performed using standard techniques and shown on Figure 1.

Patients underwent septoplasty surgery with/without partial inferior turbinectomy by resident training physician under supervision according to surgery indication of assistant surgeon. The outcome measure was the disease-specific QoL NOSE-p questionnaire validated before and three months after surgery and the physicians were blinded to NOSE scores. The sample size was calculated using the standardized effect size of 0.5, an alpha value of 0.05 and a beta value of 0.2. All data were considered non-parametric and Wilcoxon signed rank test was used to compare paired scores before and three months after surgery. We evaluated effect-size of the surgery in disease-specific QoL. Correlation between baseline score and postoperative outcome was assessed using Spearman correlation coefficient. Outcomes were compared using Mann-Whitney U test. A P value less than 0.05 was considered statistically significant.

RESULTS

Overall, 46 patients with nasal obstruction owing to nasal septal deviation with or without inferior turbinate hypertrophy underwent septoplasty. The majority of the were male [28/46 (69,1%)] with median (md) age of 37,5 (IQR=17).

Most frequent answer to all questions on baseline questionnaire was "Fairly bad problem". NOSE median base line score was 75 (IQR=26). Most frequent answer to all questions after three months was "Not a problem". NOSE median postoperative score was 10 (IQR=20).

NOSE baseline score (md=75, IQR=26) was statistically different from NOSE score three months after surgery (md=10, IQR=20), as was demonstrated by Wilcoxon signed rank test (P<0.001) (Figure 1). Surgery calculated effect size was 3.07. Spearman correlation coefficient between baseline score and postoperative outcome was statistically significant (r=-0.789, p<0.001) (Figure 2). Mann-Whitney U test did not show statistically significant difference in outcomes according to gender. (p=0.668).

DISCUSSION

Septoplasty surgery is evaluated as an effective surgery. Caldas Neto et al wrote "it could bother QoL of a patient, but, the patient always has that option to live with this condition" [10]. Prior reports already analyzed and shown the efficacy of septoplasty surgery in improving nasal obstruction and patients' satisfaction. [3, 5, 11-13]. Some of them were retrospective chart review, other used telephone survey, non-validated questionnaires [5], or intruments validated to global QoL evaluation, but not to disease-specific QoL related to nasal obstruction. Siegel et al. used a validated questionnaire for rhinosinusitis and showed a postoperative improvement, but not in general health QoL.[4]. Estudos também utilizaram avaliação objetiva através da Rinometria, que tem seu real papel ainda muito discutível. Only Stewart et al. reported the evaluation of septoplasty surgery outcome through a disease-specific QoL questionnaire, and our report partially reproduced this study protocol in Brazil. There were no prior reports in Brazil about outcome after septoplasty,[9] only directed to evaluate outcome after turbinectomy[6] [7] .

There are disease-specific QoL instruments to evaluate some nasal symptoms, but any one of these was specific to evaluate nasal obstruction. The "Chronic Sinusitis Survey (CSS)" [14], the "Rhinosinusitis Disability Index (RSDI)" [15], the "Sino-Nasal Outcome Test (SNOT-20)"[16], the "Rhinoconjunctivitis Quality of Life Questionnaire (RQLQ)"[17], and the "Allergy Outcome Survey (AOS)"[18]. The CSS, RSDI and SNOT-20 were validated to evaluate chronic rhinosinusitis, and the RQLQ and the AOS to evaluate allergi rhinitis and conjunctivitis. Another problem to use these intruments is that they were not validated to portuguese language. Although some intruments could also evaluate nasal obstruction, a specific instrument this entity were to evaluate nasal obstruction in any disease was deserved. [15, 17, 19].

The NOSE was a disease-specific QoL questionnaire that is easy and fast to answer. It is scaled from 0 to 100, with higher scores meaning more severe nasal obstruction. After its development and validation in English language by Stewart et al[2], we proceed to cross-cultural adaptation and validation to Portuguese language with participation of Prof. Michael G. Stewart. So, we have an instrument available in portuguese language to evaluate disease-specific QoL that maintained the content of the original questionnaire. This process allows Portuguese reports to be compared with other reports. [20]. This validation process permitted us to make this observational prospective study.

Correlation coefficient analysis demonstrated that patients with a significant impact in QoL from their disease have a better outcome after an intervention, as was shown in prior reports. [9]

Figure 1 - Diagram of the Cross-cultural adaptation process

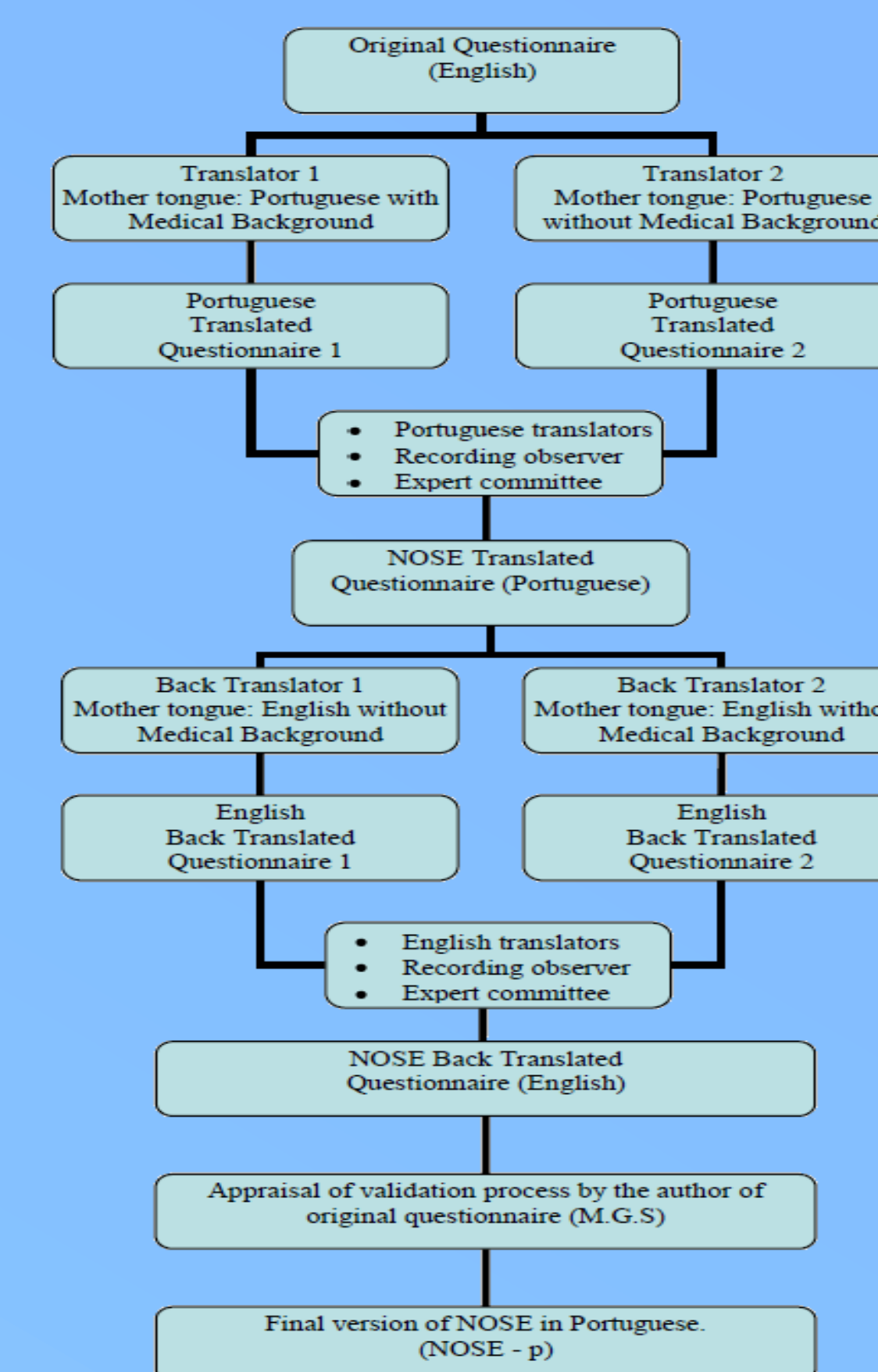
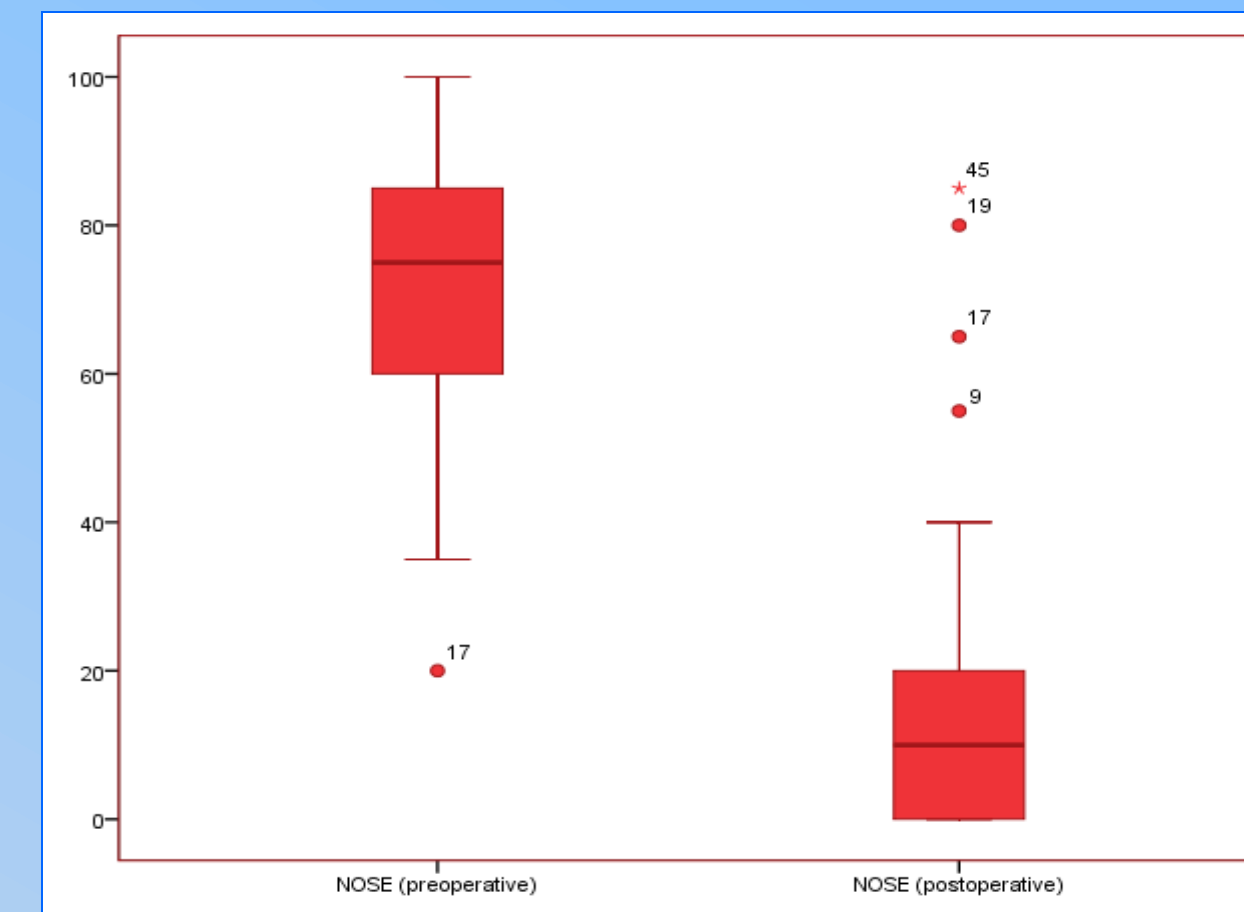


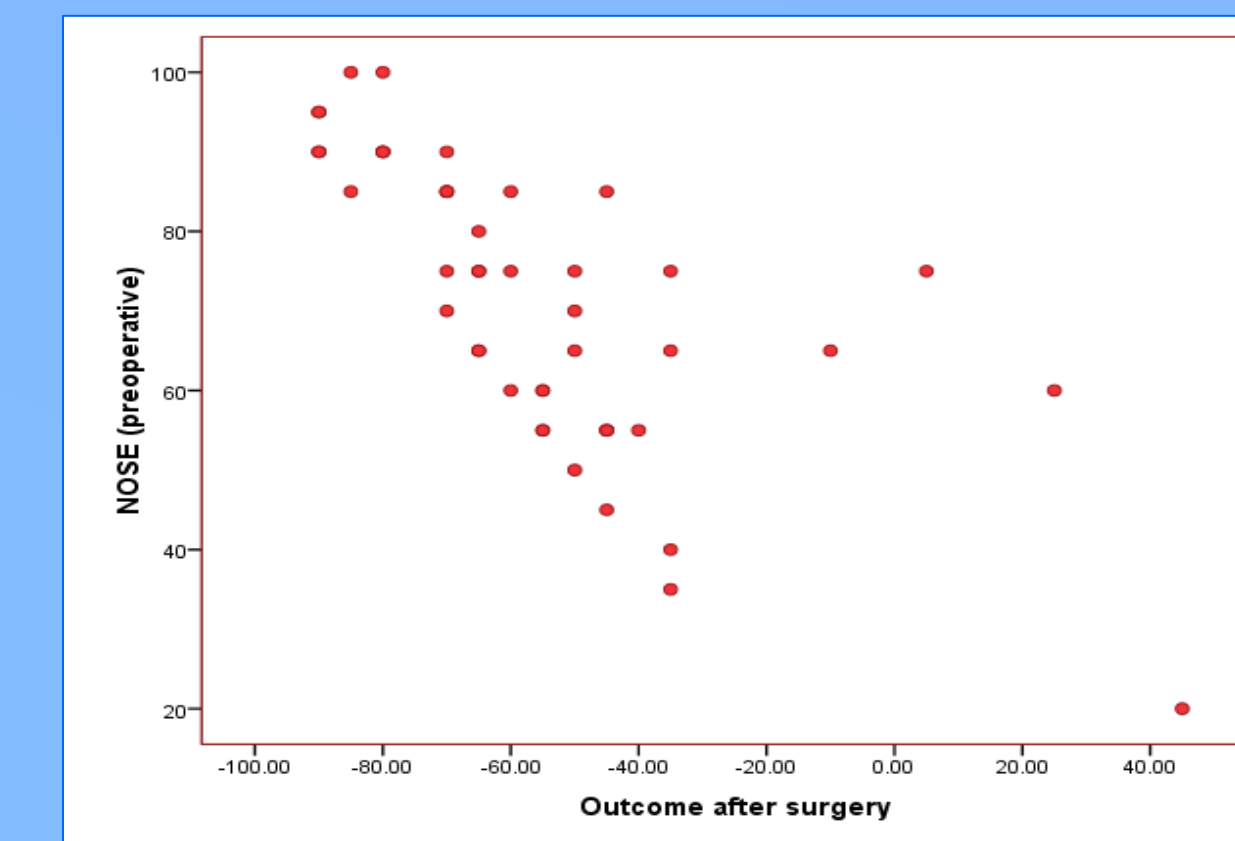
Figure 2. NOSE score pre and post-operatively (p<0.001)



CONCLUSIONS

There was a very significant improvement in NOSE QoL questionnaire three months after surgery for nasal obstruction in patients with nasal septal deviation with or without inferior turbinate hypertrophy whose underwent septoplasty surgery.

Figure 3. Figure 7. Correlation between preoperative NOSE score and outcome three months after surgery (r=0,789, p<0.001).



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