Learning Curves on Bronchoscopy Procedure Among Pulmonary Residents

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Background:
Learning process is a continuous process, as well as medical procedures. Medical bronchoscopy is a key skill for respiratory physician and taking time to achieve competency. Some issues related to the process are the knowledge about the procedure, the quality and quantity of procedure performed, and self-courage for doing the procedure. Bronchoscopy Self Assessment Tool (BSAT) and Bronchoscopy Skills and Tasks Assessment Tool (BSTAT) are some method to identify procedure competency. Learning curves of competency assessment and factors affecting these curves are needed to evaluate bronchoscopy training program. This study aimed to identify learning curves of bronchoscopy procedure by using BSAT and modified self-assessment BSTAT (mBSTAT) questionnaires for pulmonary residents and also to identify factors which correlated.

Methods:
This study is an analytical cross-sectional study design identifying learning curves of bronchoscopy procedure. First, the score of BSAT and mBSTAT questionnaires to pulmonary residents in Persahabatan Hospital, Jakarta was calculated. These scores are crossed and analyzed with other variable that contributing. Subject is chosen by consecutive sampling which consist of pulmonary residents that already passed bronchoscopy round based on curriculum.

Results:
Among 33 subjects who participated in this study, 7 subjects have not reached the qualification number of procedure, set by curriculum (15 procedures). However, BSAT scores and mBSTAT are not correlated with the number of bronchoscopy procedures that had already been done. By Spearman rank test, BSAT scores has a strong negative correlation with the level of specialist program (p<0.01; r = -0.756) and very strong negative correlation with time period after bronchoscopy round (p<0.01; r = -0.857). mBSTAT scores has a moderate negative correlation, both with the level of specialist program (p<0.05; r = -0.413) and also with time period after bronchoscopy round (p<0.05; r = -0.437). BSAT scores were positively correlated with mBSTAT score (p<0.01; r = 0.479). For multivariate analysis, by using linear regression, only variable period after bronchoscopy round which can predict BSAT scores (r = -0.840) for about 69.6%.

Conclusion:
Learning curve of pulmonary resident in bronchoscopy procedure is not related to how much procedures that had already been done, but with the time period after the last procedure. So repetition for doing the procedure is needed to get a better self-assessment result.