SELECTION OF ELECTROCARDIOGRAPH FOR A CARDIOLOGY DEPARTMENT USING ANP

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ABSTRACT

Selection of materials in health care systems is more critical than the other systems due to materials affect human life and the expenses of materials are met by the states. So, the most effective decisions to be made in the selection of materials. In this study, selection of electrocardiograph(ECG) for a cardiology deparment is discussed. ECG provides to record the occurred electrical activity of the heart. Many factors must be considered in the ECG selection. This situation requires the use of multi criteria decision making methods, ANP was used due to the take into account relationships between criteria. For determining the most suitable criteria, survey was applied to university staff and SPSS was used for reliability test. In conclusion the most suitable alternative was determined for the department.

Keywords: ANP, EKG Device Selection, Survey

1. Introduction

Medical devices, for each country, one of the most important and critical component of health services. The development curve of medical devices starting with natural and simple application and exchange to complex one due to advances in science and technology. In this case decisions of medical devices are very different to former. But today for a lot of organizations the only criteria is still price. Medical device decisions must be made considering the multi criteria.

2. Literature Review

Hede et al. (2013), used multi criteria hierarchical model, which is in fact an extensive revision of the AHP for the sustainability of medical devices. Cho and Kim (2003), used AHP for selecting medical devices and materials for development in Korea. They concluded that unabsorbable suture is the most attractive medical product. Hummel et al. (2000), proposed the application of the AHP to the medical technology assessment that occurs during the development process and prior to clinical diffusion.

3. Hypotheses/Objectives

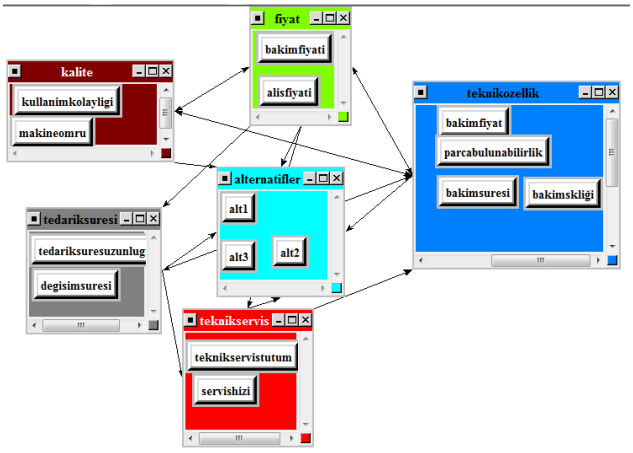
Although the importance of the selection of the medical materials, decisions are made according to only one criteria. In this study a systematic approach was used. The most suitable alternative was choosen according to ANP results.

4. Research Design/Methodology

Survey was applied to cardiology doctors using SPSS for determining the criteria. Anova test was used for reliability analysis. As a result more accurate main criteria and sub criteria are considered for application. The main criteria are cost, quality, technical service, technical properties and procurement duration. Doctors were consulted evaluating alternatives according to criteria for ANP.

5. Data/Model Analysis

A screenshot of the superdecision program given below.



Name	Graphic	Ideals	Normals	Raw
alt1		1.000000	0.361326	0.120473
alt2		0.863994	0.312183	0.104088
alt3		0.903591	0.326491	0.108858

6. Limitations

Although there has been many multi criteria decision making model ANP was selected for this study due to take into account relationships between criteria. Other multi criteria decision making methods and hybrid methods also can be used for making decisions.

7. Conclusions

Selection of medical device is an issue that must be considered on multicriteria. In this study for the selection of electrocardiograph ANP was used due to take into account relationships between criteria. According to earlier decision mechanism more accurate and a systematic approach was used.

8. Key References

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