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2005-04-07

## A Web Based System for Sleep Disorders Management

Varoneckas, G.; Zilinskas, A.; Varoneckas, A.; Podlipskyte, A.;  
Martinkenas, A.

Presented at Med-e-tel 2005 Conference in Luxembourg.

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<http://hdl.handle.net/123456789/3540>

Presentation

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# A WEB-BASED SYSTEM FOR SLEEP DISORDERS MANAGEMENT



G. Varoneckas<sup>1</sup>, A. Zilinskas<sup>2</sup>, A. Varoneckas<sup>2</sup>,  
A. Podlipskyte<sup>1</sup>, A. Martinkėnas<sup>1</sup>

*<sup>1</sup>Institute Psychophysiology and Rehabilitation , Palanga, Lithuania*

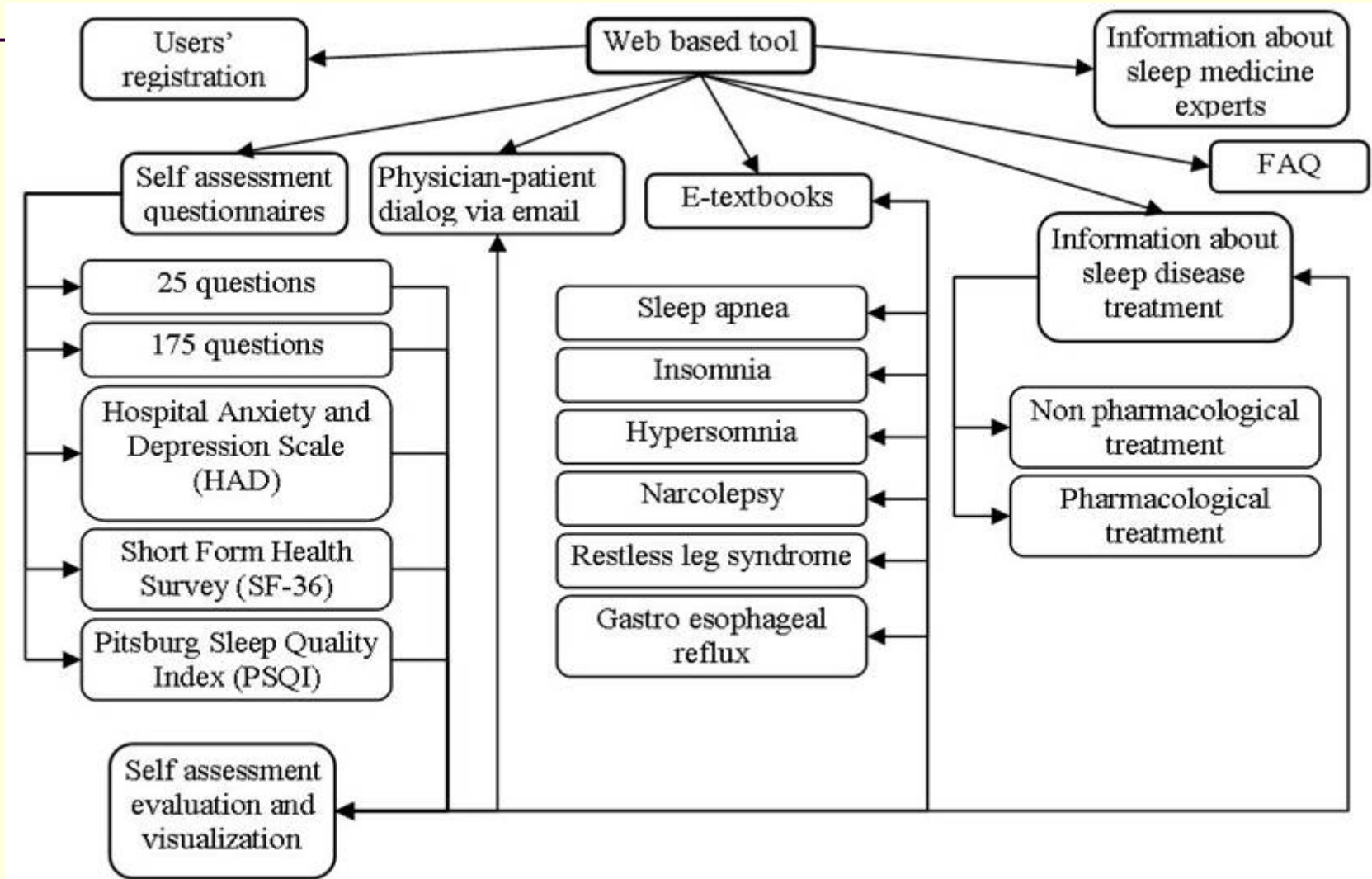
*<sup>2</sup>Vytautas Magnus University , Kaunas, Lithuania*

# The goal of the study

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- was development of a public Web-based tool for self-assessment of sleep disorders, specialized diagnostics, treatment regimens, education and consultations with physician on sleep disorders

# Structure of the Web based system



# System configuration

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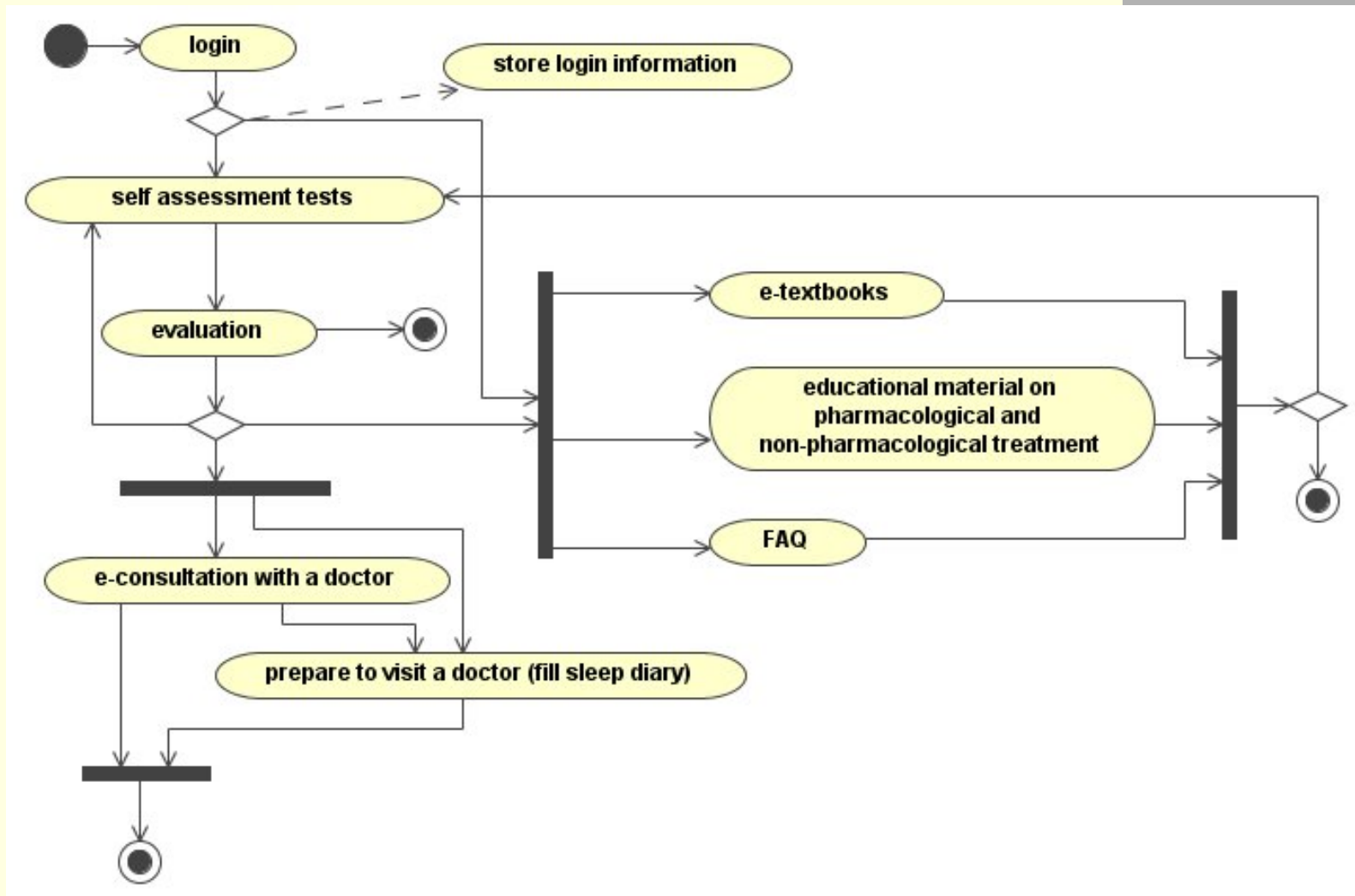
- Linux – based web/database server

- Apache web server
- PHP script language
- Octave
- MySQL database


- Expert system

- Knowledge base (linguistic “IF...THEN...” rules)
  - Fact base
  - Rule base
- Inference mechanism

# User activity diagram



# Self assessment using HAD scale

 **KMU Psichofiziologijos ir reabilitacijos institutas**

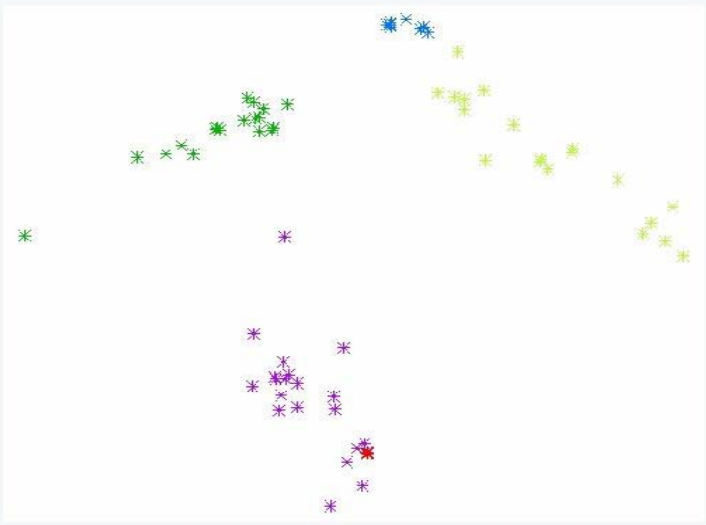
**Miego medicinos centras**

**Naujienos**      **Miego ligos**      **Gydymas**      **Registracija**      **Kontaktai**

**RĖMĖJAI:**  
**sanofi-synthelabo**

Vardas: 12313      Pavardė: 564156      Tyrimo data: 2005 3 24

	Balų suma	Įvertinimas
Nerimas	15	Labai išreikštas nerimas
Depresija	15	Depresija labai išreikšta



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Lietuva

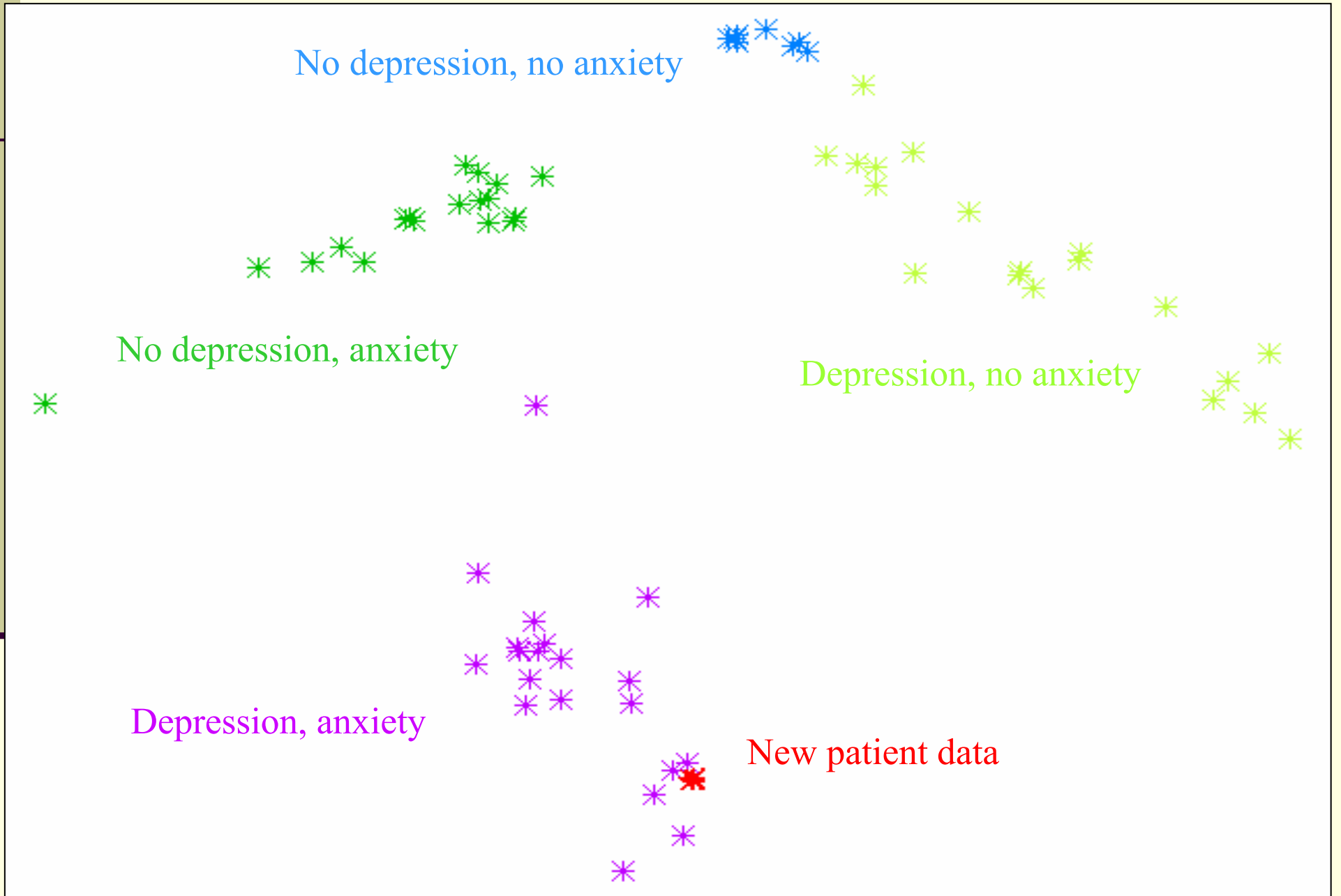
# Self assessment using HAD scale

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<b>Anxiety</b>	<b>YES (15)</b>
<b>Depression</b>	<b>YES (15)</b>







# Self assessment using PSQI



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Miego medicinos centras

Naujienos Miego tyrimai Miego ligos Gydymas Registracija Kontaktai

RĖMĖJAI:  
sanofi~synthelabo

Vardas: *kjfds* Pavardė: *kjhdjkds* Tyrimo data: 2005 3 25

Pitsburgo miego kokybės indeksas (PMKI): 16

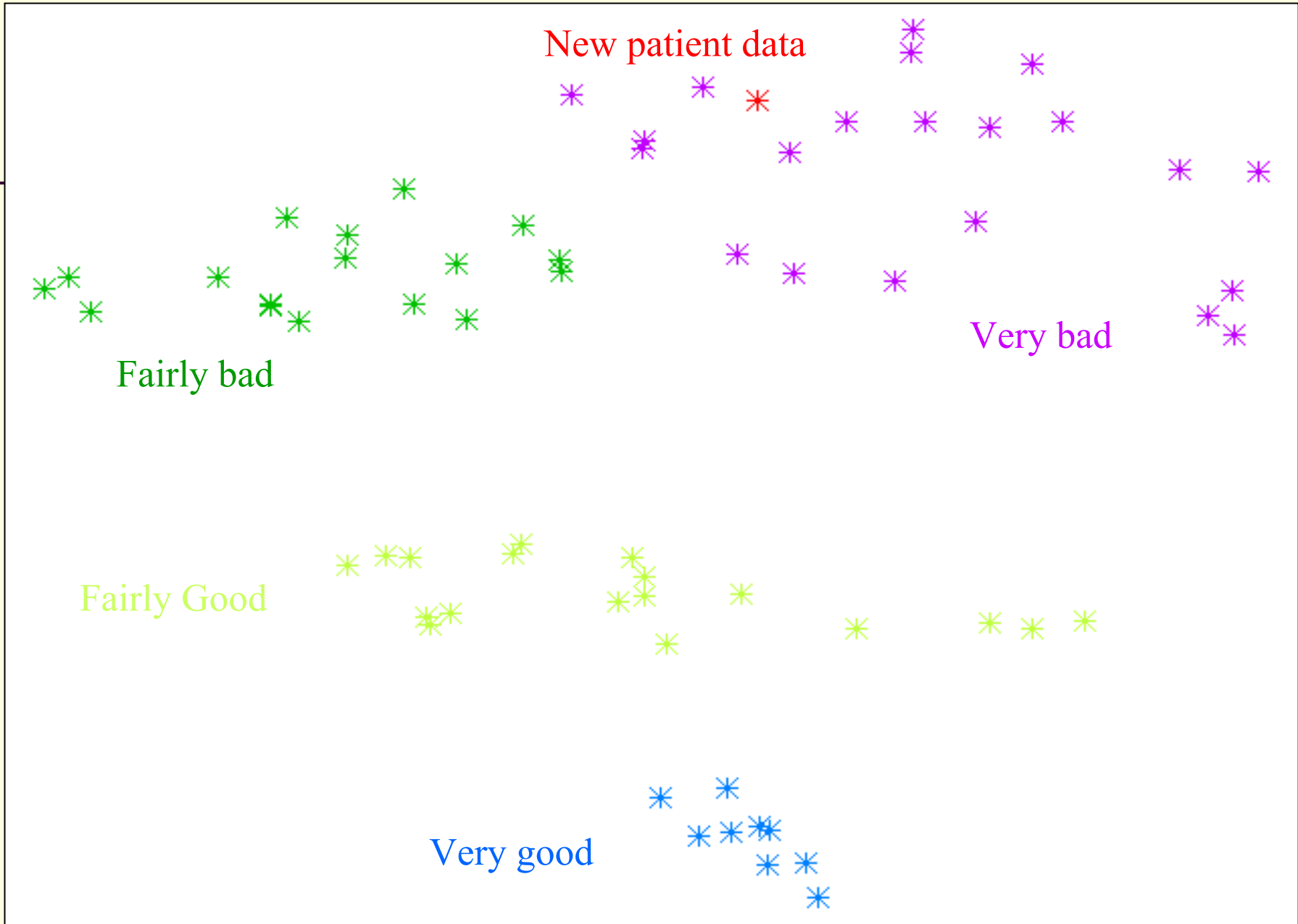
PMKI komponentų įvertinimai:

Subjektyvus miego kokybės vertinimas:	2
Užmigimo trukmė:	1
Miego trukmė:	3
Miego efektyvumas:	3
Trukdymai miegui:	2
Migdomųjų vartojimas:	3
Aktyvumo problemos dienos metu:	2

# Self assessment using PSQI

The Pittsburgh Sleep Quality Index ( PSQI) 16

Subjective sleep quality	2
Sleep latency	1
Sleep duration	3
Habitual sleep efficiency	3
Sleep disturbances	2
Use of sleeping medication	3
Daytime dysfunction	2



# Conclusions

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- A Web-based tool combining e-learning, expert system and tele-medicine techniques is useful to enhance the health care of patients suffering from sleep disorders
- Visualization of assessment of sleep quality and psychoemotional status by means of multidimensional scaling improves explanatory possibilities of the expert system.