

ABSTRACT

Kalam, M. Zatiar E., 2014. **Implementation of Case Based Reasoning (CBR) and K-Nearest Neighbor (k-NN) Method on Supporting System Decision to Determine Depression Level of Diabetic Mellitus Patients.** Thesis of Computer Science Program, Information Technology and Computer Science Program, University of Brawijaya

Supervisors (1) Budi Darma Setiawan, S.Kom, M.Cs. (2) Dian Eka Ratnawati, S.Si, M.Kom

Lifestyle and depression are contributing in increasing Diabetic Mellitus prevalence. Depression affects in the beginning of pathogenesis, controlling, and complication of diabetes mellitus. Depression came from psychosocial stressor and biochemical alteration that related to diabetic and therapeutic process. That is why Diabetic Mellitus most occurred on people with depression rather than people with healthy mental status. In this research, these data are collected from previous research that had been done by Purnomo in Polyclinic Endokrin Saiful Anwar Hospital Malang. This research is using *Case Based Reasoning (CBR)* method with *K-Nearest Neighbor (K-NN)* algorithm. This method is used to classify new case by counting similarities values of the cases and the last classification are determined by *Weighted Voting* method between the alternative of predominantly appear and has the highest voting value. This system is tested by comparing system counting result with classification value from previous research by Purnomo. Testing result showed that system accuracy level reach 87%.

Keywords : depression, diabetic mellitus, *case based reasoning*, *k-nearest neighbor*, *weighted voting*, java