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خلاصه مقاله:

Background: One of most important operations research problems is Nurse Scheduling Problem (NSP) that tries to find an optimal wayto assign nurses to shifts with a set of hard constraints. Most of the researches are dealing with this problem in deterministic environmentwith constant parameters. While In the real world applications of NSP, the stochastic nature of some parameters like number of arrivingpatients, stay periods, etc. are some sources of uncertainties that need to be controlled to provide a qualified schedule. Objectives: In this article we propose our model in an uncertain environment in Department of Heart Surgery in Razavi Hospital. Materials and Methods: The demand and stay period of patients are stochastic whose the distribution is determined from historicaldata. Finally, the demand of nurses in each shift in planning horizon is calculated regarding the priority (vitality) of patients. Results: The stochastic optimization is adapted for our problem and the Sample Average Approximation (SAA) method is used to obtaina optimal schedule with respect to minimizing the regular and over time assignment costs. The results have been analyzed and show thevalidity of our model. Conclusions: In this model the demand and stay period of patients are stochastic whose the distribution is determined from historicaldata. We also consider the priority (vitality) of patients in our model.

کلمات کلیدی:

Nurse; Uncertainty; Stochastic Processes; Patients