

Computerized integer programming method: Menu scheduling for critical illness patients

Abstract

In this paper, critical illness patients are referred to breast cancer patients. This cancer is developed from the breast tissue. It is developed due to the erratic growth of cells of the breast tissue. In Malaysia, according to the statistics in 2017, one out of 20 individuals has the breast cancer in their life. In order to help the breast cancer patient in choosing the best food in their meal of a whole day, the way on how to use different mathematical programming methods to prepare a proper and healthy planning diet menu that fulfil all the nutrients constraints with the minimum cost for the breast cancer patient will be showed out. In the literature review, previous research for the menu planning, approaches used for the optimization are being reviewed in detail. In methodology, there are two mathematical programming methods that will be applied which are integer programming and binary integer programming methods. There are two sets of data which is 100 food items for small data model and 426 food items for big data model. At the end of this research, it should be able to provide a minimum cost one day menu and weekly menu for the breast cancer patients with the sufficient nutritional value.

Keywords

Breast cancer; Menu planning and integer programming