

عنوان مقاله:

Zoning map of kidney stones prevalence using fuzzy logic and geographic information system: A GIS based decision making for planning and control

محل انتشار:

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خلاصه مقاله:

Today, due to population growth and the spread of diseases, human safety and health control has become particularly important. In this study, geographic information system (GIS) technology and fuzzy logic have been used to zoning prevalence of kidney stones. For this purpose, criteria maps have been generated from four information layers of population blocks, disease points, annual isotherm lines and DEM of the region. Then the fuzzy functions and roles have been defined, and finally, the zoning map is generated using the fuzzy logic. The analytical hierarchy process (AHP) has been implemented, to validate the fuzzy logic model. According to the results, in the areas between the center and north of Gorgan, kidney stones are more likely to occur. Where the density of disease points, population density, and temperature are high. Also, the zoning map obtained from fuzzy logic is more accurate than Boolean logic. The results of this study have been shown, the combination of GIS and fuzzy logic for the production of zoning maps, brings reliable results, and health planners can be use the generated maps as a useful tool in monitoring and evaluating diseases.

کلمات کلیدی:

Kidney stones disease, zoning map, GIS, fuzzy logic, and AHP

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