

UNIVERSITI TEKNOLOGI MARA

**SPATIO-TEMPORAL CLUSTERING OF DRUG
ADDICTION IN MALAYSIA**

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ABSTRACT

Drug addiction is a serious concern which causes a great impact to the society, economy and country. Thus, there is a need to study drug addiction phenomena and trend for both spatial and temporal scales besides clustering the area of drug addicts' risk. We mapped spatio-temporal heterogeneity drug addicts' cases of 15 states in Malaysia within nine years (2010–2018) to understand the geographical area of state in the same region and to identify the hotspot areas of high-risk drug addicts. Using Ward linkage hierarchical clustering, we then characterized the drug-addicts risk areas into several potential clusters. The result showed a hierarchical clustering analysis for the number of drug addiction by states which generated three drug-addicts risk clusters namely the high risk drug addicted (HRDA) states which were Pulau Pinang, Selangor, Kedah, Kelantan, Perak, Johor in cluster 1, the moderate risk drug addicted (MRDA) states which were Terengganu, Pahang and Federal Territory of Kuala Lumpur in cluster 2 and the low risk drug addicted (LRDA) states which were Negeri Sembilan, Perlis, Melaka, Federal Territory of Putrajaya, Federal Territory of Labuan, Sabah and Sarawak in cluster 3. These findings can be beneficial for the respective stakeholders to monitor and counter the problem focusing on the high-risk drug addict areas

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