Title (3)	:	**Association of Flood Risk Patterns with Waterborne Bacterial Diseases in Malaysia**
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Abstract	:	Flood risk has increased distressingly, and the incidence of waterborne diseases, such as diarrhoeal diseases from bacteria, has been reported to be high in flood-prone areas. This study aimed to evaluate the flood risk patterns and the plausible application of flow cytometry (FCM) as a method of assessment to understand the relationship between flooding and waterborne diseases in Malaysia. Thirty years of secondary hydrological data were analysed using chemometrics to determine the flood risk patterns. Water samples collected at Kuantan River were analysed using FCM for bacterial detection and live/dead discrimination. The water level variable had the strongest factor loading (0.98) and was selected for the Flood Risk Index (FRI) model, which revealed that 29.23% of the plotted data were high-risk, and 70.77% were moderate-risk. The viability pattern of live bacterial cells was more prominent during the monsoon season compared to the non-monsoon season. The live bacterial population concentration was significantly higher in the midstream ($p < 0.05$) during the monsoon season ($p < 0.01$). The flood risk patterns were successfully established based on the water level control limit. The viability of waterborne bacteria associated with the monsoon season was precisely determined using FCM. Effective flood risk management is mandatory to prevent outbreaks of waterborne diseases.