

Knowledge on maintaining cold chain for childhood immunisation vaccines at the primary healthcare setting Malaysia

ABSTRACT

Background: A proper maintenance of vaccine cold chain is important to achieve full benefit of childhood immunisation, apart from high remarkable childhood immunisation coverage and timely administration of vaccines. Ensuring an adequate knowledge among healthcare workers in maintaining vaccine cold chain system is crucial to ensure the efficacy of vaccines being administered and the effectiveness of the national immunisation programme. Objective: To determine the contributing factors towards knowledge related to vaccine cold chain maintenance among private healthcare assistants at primary care level in the district of Hulu Langat, Selangor. Materials and Methods: A cross sectional study was conducted from 1st February until 30th July 2016 among 493 healthcare assistants from 270 private clinics, which were randomly selected in Hulu Langat District, Selangor. A validated self-administered questionnaire was used which consisted of five sections on sociodemographic, duration of working experience in healthcare field, history of training related to maintaining vaccine cold chain, attitude towards maintaining vaccine cold chain and knowledge on maintaining vaccine cold chain. Data collected was analysed using IBM Statistical Package for Social Science (SPSS) version 22.0. Three stages of analysis were conducted; descriptive analysis (mean and median), bivariate analysis (Chi square (χ^2) or Fisher Exact Test) and multivariate analysis (multiple logistic regression). In this study, *P* value of <0.05 was considered statistically significant. Result: The response rate was 91.3%. Only 235 (47.7%) respondents had good knowledge on vaccine cold chain. It was found that, there was a significant association between knowledge on maintaining vaccine cold chain and race ($\chi^2=6.016$, *P*=0.013), monthly income ($\chi^2=12.024$, *P*=0.007), duration of working experience in healthcare field ($\chi^2=8.429$, *P*=0.052), history of attending training related to maintaining vaccine cold chain ($\chi^2=29.884$, *P*=0.001) and attitude towards maintaining vaccine cold chain ($\chi^2=86.087$, *P*=0.001). Significant predictors for good knowledge on maintaining vaccine were; monthly income more than RM 2001 and above (AOR =4.50, 95% CI [1.410, 14.353]), history of attending training (AOR=3.25, 95% CI [1.796, 5.868]) and positive attitude towards maintaining vaccine cold chain (AOR=5.82, 95% CI [3.841, 8.8821]). Conclusion: The finding of this study indicate poor level of knowledge related to maintaining vaccine cold chain among private healthcare assistants in Hulu Langat District, Selangor with attitude towards maintaining vaccine cold chain being the most significant predictor towards good knowledge. Initiatives related to quality improvement activities in order to improve knowledge on maintaining vaccine cold chain should be properly planned which include continuous training and supervision as well as ensuring availability of educational materials may improve knowledge related to the maintenance of vaccine cold chain.

Keyword: Vaccine; Cold chain; Healthcare assistants; Immunisation; Primary care