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Systems Thinking Approach on Foetal Abnormalities Associated with Alpha-Fetoprotein Level

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Abstract

Foetal complications associated with abnormal Alpha-Fetoprotein (AFP) levels are becoming a serious matter. The risk of adverse pregnancy outcomes (APOs) is substantially greater in the raised maternal serum-alpha fetoprotein (MS-AFP) group than in the normal MS-AFP group. The top three APOs in terms of occurrence rate in the increased MS-AFP group were structural foetal abnormalities, spontaneous abortion, and premature delivery. Low levels of AFP in the maternal may indicate a risk of Down syndrome (DS). This is an important matter that needs to be investigated and dealt with promptly. This research aims to investigate methods of diagnosis and screening on AFP foetal based on system thinking. It applies the systems thinking approach on foetal complications associated with AFP level from a theoretical perspective. The purpose is to provide an analytical and integrated method to deal with foetal complications associated with AFP level. This integrated approach comprises various analytical aspects, including conceptual framework, data analysis, evaluation of the diagnostic and screening methods. How systems thinking can contribute to improving all these aspects of foetal

complication will be investigated. A systematic review of literature from various databases was conducted. The methodology also enabled a detailed explanation of the major problems of AFP in the form of a causal loop diagram based on the holistic view of the systems thinking approach. This research is expected to contribute in various ways on how systems thinking can contribute to overcoming foetal abnormalities associated with abnormal AFP levels. It is expected that the application of a systems approach could provide an effective method of analysis for understanding and managing the foetal abnormalities by considering all aspects in a holistic manner and clearer methods of intervention to reduce the cases. © 2023,IIUM Medical Journal Malaysia. All Rights Reserved.


Author keywords

Alpha-fetoprotein; foetal abnormalities; maternal screening; systems thinking

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