

Sigma's 30th International Nursing Research Congress

The Decision Algorithm for the Benefit-Risk Assessment of Complementary and Alternative Medicine Use in Diabetes

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Purpose:

Lack of clinical practice guideline to optimize patient care by making an evidence-based decision from reviewing evidence and the benefit-risk assessment of Complementary and Alternative Medicine (CAM) use in patients with diabetes has found worldwide. The purpose of this study is to develop a guideline-based decision algorithm for assessing the benefit-risk of CAM use in diabetes and test the reliability and validity of this algorithm.

Methods:

The Delphi-Analytic Hierarchy Process (AHP) method was used to establish a consensus-based decision algorithm with the following steps: 1) to discuss and vote on each recommendation within the structured consensus process; 2) to rate indicators and criteria to be considered in the benefit-risk assessment of CAM use; 3) to reach consensus on each recommendation and important criteria for the benefit-risk assessment; 4) to build up an efficient mode decision algorithm in optimizing choice of care options on CAM use; and 5) to complete consensus-based CPG for the assessment and management of CAM use in diabetes. We performed a three-round modified Delphi study to prioritize the criteria for assessment and management of CAM use in diabetes and then achieve consensus of panel member's opinion on guideline-based decision algorithm. A total of 26 experts, including academics, diabetic physicians, diabetic dietitian, and diabetic nurses was anonymously completed the survey. The analytic hierarchy process was undertaken for the data collection and analysis.

Results:

The five domains with 18 criteria regarding the benefit-risk assessment of CAM use in diabetes were identified. The most important domain was the safety of CAM, including side effect, contraindication and medical compliance. Other sequential domains were patient factors, utility factors, medical environment factors, and product factors. The consistency and consensus is acceptable as the principal eigenvalue ($\lambda_{max}= 5.041$) was equal to the number of comparisons and both of consistency index (CI= 0.01) and Consistency Ratio (CR= 0.009) were less than 0.1.

Conclusion:

The decision making accuracy of healthcare professionals depend largely on the required systematic consideration of decision criteria and evidence available to inform them; therefore, the effectiveness and comprehensiveness of guideline-based decision algorithm providing support for professionals are extremely helpful in the process of their decision making on CAM use in diabetes management.

Title:

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Keywords:

complementary and alternative medicine, decision and diabetes

References:

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Abstract Summary:

It is a guideline-based decision algorithm tool providing support for healthcare professionals in the benefit-risk assessment of Complementary and Alternative Medicine (CAM) use among patients with diabetes.

Content Outline:

Introduction

1. Diabetes is one of the most prevalent and fastest growing diseases with 9% of global prevalence, about 347 million people who have diabetes in 2013, and it is a major cause of morbidity and mortality worldwide (World Health Organization, 2015).
2. Chang et al.(2011) highlighted that the prevalence of CAM use among Type 2 diabetes in Taiwan was 61.0% and of these, 75.4% often chose not to disclose such usage.
3. The risks associated with this non-communication have received far less attention in clinical settings, particularly if it applies to those therapies which have a pharmacological action and may bring about the adverse event of herb-drug interactions (Hall et al., 2015).
4. Thus, it is an urgent need to develop CPG for all healthcare professionals to optimize patient care by making an informed decision support from a review of evidence and the benefit-risk assessment of CAM.

Body

1. The Delphi method and the Analytic Hierarchy Process (AHP) are a combined approach using an anonymous voting scheme to develop group consensus for all statements and recommendations which were used for this study.
2. The Delphi method involved three parts: 1) establishment of face validity for each recommendation by diabetes nurses; 2) achievement of group consensus on all recommendations; and 3) the prioritization of each assessment criterion and sub-criterion in the assessment and management of CAM use in diabetes by panels.
3. To construct the guideline-based decision algorithm using AHP method, all criteria which reach consensus level (70%) were arranged into a hierarchy. The five domains with 18 criteria regarding the benefit-risk assessment of CAM use in diabetes were identified.
4. Our study indicated that the principal eigenvalue ($\lambda_{max}= 5.041$) was almost equal to the number of comparisons and both of consistency index (CI= 0.01) and Consistency Ratio (CR= 0.009) were less than 0.1. The consistency is perfect.

Conclusion

1. Given the high use of CAM combined with conventional medicine and potential risks of harm in CAM use without disclosure, nurses should take a leading role in discussion with patients about their CAM use.
2. The decision to develop the guideline-based decision algorithm tool for the assessment and management of CAM use in diabetes is intended to enable nurses to have better direct-care competency on the communication of CAM use in clinical practice.

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Author Summary: Chang's current research interests include adult nursing, complementary and alternative medicine and diabetes and she has published in reputed journals internationally as well as a reviewer of various SCI & SSCI journals.