



Developing a Culturally Sensitive Framework for Sexual and Reproductive Health Education: Validating With the Fuzzy Delphi Method

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Abstract

Introduction: The lack of a culturally sensitive sexual and reproductive health (SRH) framework in Malaysia has contributed to misguided approaches and low acceptance of sexual education programs. **Methods:** This study employed the Fuzzy Delphi Method (FDM) to develop and validate criteria for a culturally sensitive SRH framework. Data were derived from interviews with 31 parents and an analysis of an existing parenting sexuality module. **Results:** Of the 36 proposed criteria, 34 were accepted by the expert panel and categorized into four dimensions. Criterion A6 (*SRH provider should encourage those who have strayed to seek repentance*) and Criterion C1 (*Emphasizing men as the focal point for SRH education*) were excluded due to exceeding the threshold value ($d > 0.2$). **Discussion:** The FDM analysis prioritized culturally relevant criteria that shape SRH communication, providing guidance for educators and policymakers to strengthen SRH programs in Malaysia.

Keywords

culturally sensitive SRH education, framework development, Fuzzy Delphi Method, parental perspectives, community acceptance

Introduction

Sexual and reproductive health (SRH) education has become increasingly recognized as essential to adolescents' overall health and well-being. Comprehensive SRH education empowers young people with the knowledge and skills necessary to make informed decisions, maintain healthy relationships, and understand their own bodies (UNESCO, 2021). However, the acceptance of SRH education remains low, particularly in countries with strong religious backgrounds (Sanjakdar, 2022). For instance, in Malaysia, where the majority of the population practices Islam and holds largely conservative views, discussions on SRH education are still not fully embraced by society (Sibanda et al., 2023). In Malaysia, SRH education has been implemented by various agencies targeting adolescents and parents. The Ministry of Education integrates SRH topics within the national curriculum under Health and Physical Education, aiming to develop essential knowledge and life skills among students. The Ministry of Women, Family and Community Development, through the National Population and Family Development

Board (LPPKN), provides community and family-based modules such as *Modul Cakna Diri Remaja*, which includes components for both adolescents and parental engagement. NGOs like I-Medik and the Federation of Reproductive Health Associations Malaysia (FRHAM) also play an active role. I-Medik's ReproAlert! program delivers SRH education grounded in Islamic medical ethics (I-Medik, 2021), while FRHAM advocates and promotes comprehensive sexuality education and reproductive health services across the country (FRHAM, n. d.).

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Many facilitators under these programs receive formal training to ensure quality and contextual delivery (Ikatan Pengamal Perubatan & Kesihatan Muslim Malaysia, n.d.). However, SRH education in Malaysia remains fragmented, lacking integration across sectors and often facing resistance due to cultural and religious sensitivities, especially among conservative or rural communities. These tensions have led to the rejection of certain topics such as safer sex, contraception, pornography, and sexual diversity (Ellin et al., 2024; Sham et al., 2020). Moreover, the absence of standardized evaluation mechanisms and unequal regional implementation pose significant barriers to the effectiveness of SRH programs. Therefore, a revised, culturally sensitive, and faith-informed framework is crucial to improve the reach and relevance of SRH education for Malaysian parents.

Malaysia's unique social landscape comprises multiple ethnic and religious groups, including Muslim, Buddhist, Christian, and Hindu communities, each with distinct perspectives on family life, morality, and sexuality. These differences significantly influence parental views on SRH education, shaping how they prefer these topics to be presented to their children (Abdul Hamid et al., 2020). Despite the government's efforts to implement SRH in schools, much of the existing curriculum has struggled to gain universal acceptance, in part due to perceived cultural and religious insensitivities (Yeo et al., 2018). The absence of an inclusive framework has created a gap between public health goals and community values, highlighting the need for a culturally relevant SRH education model.

Method

Research Design

This study employed the Fuzzy Delphi Method (FDM) to validate culturally sensitive SRH education criteria in Malaysia through expert consensus. A structured questionnaire was developed and distributed to experts in health education, cultural studies, and Islamic perspectives. The Fuzzy Delphi Method (FDM) offers significant advantages over the traditional Delphi Method, particularly in managing uncertainty and subjectivity in expert responses. Unlike the traditional Delphi approach, which relies on fixed numerical scales and often requires multiple rounds to achieve consensus, FDM incorporates fuzzy logic that allows for more nuanced and realistic input from experts (Jamil & Azeez, 2014). Through the use of linguistic variables that are converted into triangular fuzzy numbers, experts are able to express their opinions with greater flexibility, reflecting the ambiguity often inherent in complex or sensitive issues such as sexuality education.

This approach not only improves the accuracy and objectivity of consensus-building but also reduces the number of survey rounds needed (Aishah et al., 2024). The process of defuzzification helps quantify consensus levels systematically,

minimizing subjective interpretation and enhancing the reliability of the findings (Gengatharan et al., 2023). Furthermore, FDM is especially useful when dealing with culturally sensitive or multidisciplinary topics, as it tolerates a wider range of expert perspectives without compromising the overall goal of consensus. These strengths make FDM a more efficient and effective method for identifying and validating criteria in contexts like parental SRH education in Malaysia. Criterion assessment is conducted using a Likert-type scale, which is distributed to an expert panel for evaluation. Each Likert-type scale rating selected by an expert is converted to a fuzzy scale through fuzzy numbering, represented by binary terms (0, 1). This fuzzy numbering approach yields three values: the minimum, the most reasonable, and the maximum value, from which experts can make selections (Jamil & Azeez, 2014).

Phase 1

Aim and Context of SRH Education Framework. The SRH education framework is developed with the aim of ensuring that elements such as content, strategies, and approaches in SRH education respect and align with cultural norms and are sensitive to religious values. This is crucial to ensure that SRH education is relevant to the situation, acceptable to the general population in Malaysia, and effective in its delivery.

Identifying Criteria for the Framework. Criteria were identified through qualitative interviews with 31 parents and critical discourse analysis (CDA) of the *Cakna Diri* module by LPPKN. Thematic analysis guided the process, followed by a review to improve clarity and structure. Table 1 outlines the initial criteria developed prior to expert evaluation. A total of four dimensions and 36 criteria emerged from this process, categorized as follows: (a) religion as a source of support (eight criteria), (b) educational content (12 criteria), (c) cultural norms and societal expectations (13 criteria), and (d) needs (three criteria).

Phase 2

Expert Evaluation Using Fuzzy Delphi Method. In the application of the Fuzzy Delphi Method (FDM), determining an appropriate sample size is crucial and is influenced by factors such as the homogeneity of the expert panel, the complexity of the subject matter, and the desired level of consensus (Saffie et al., 2016). Recent studies have demonstrated that a panel comprising 10 to 20 experts is often sufficient for achieving reliable consensus (Kaur et al., 2022). The selection of experts is paramount; they should possess substantial experience and knowledge in the relevant field to ensure the quality of input (Abd Anter et al., 2021). Moreover, the use of fuzzy logic in FDM allows for the accommodation of uncertainty and ambiguity in expert opinions, enhancing the robustness of consensus even with smaller sample sizes (Kaur et al., 2022). Therefore, while there is no