

INTERNATIONAL JOURNAL OF  
EDUCATION, PSYCHOLOGY  
AND COUNSELLING  
(IJEPC)

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## STAKEHOLDERS' KNOWLEDGE AND SKILLS ON CORE THEMES OF HOLISTIC SEXUALITY EDUCATION FOR MALAYSIAN CHILDREN WITH LEARNING DISABILITIES

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### Article Info:

#### Article history:

Received date: 08.01.2026

Revised date: 18.01.2026

Accepted date: 04.02.2026

Published date: 05.03.2026

#### To cite this document:

Ng, A. M. L., & Loh, S. C. (2026). Stakeholders' Knowledge and Skills on Core Themes of Holistic Sexuality Education for Malaysian Children with Learning Disabilities. *International Journal of Education, Psychology and Counselling*, 11(62), 457-478.

DOI:10.35631/IJEPC.1162029

### Abstract:

A Holistic Sexuality Education (HSE) advocates that children, regardless of disabilities, learn about sexuality not only in formal education settings, but through multiple formal and informal channels. An effective HSE requires a collaborative effort involving various stakeholders to create a supportive environment. Despite documented challenges for adults to access and provide contemporary sexuality education to these children, fewer studies have empirically assessed their knowledge and skills. Thus, this study aimed to assess the current state of stakeholders' perceived levels of knowledge and skills regarding the core themes of Holistic Sexuality Education in Malaysia. An exploratory survey was conducted among 415 stakeholders with descriptive data analysis. The results revealed that the stakeholders demonstrated overall moderate levels of both knowledge and skills across the four targeted themes. However, performance varied among stakeholder groups and the four theme domains. The findings provided empirical input for the development of tailored content within a teaching guideline to ensure that the identified gaps are adequately addressed.

### Keyword:

Holistic, Knowledge, Learning Disabilities, Malaysian Children, Sexuality Education, Skills



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## Introduction

Sexuality is an inherent and integral part of the human experience, with each individual having a distinct sex, regardless of any disabilities (Diah & Samsudin, 2020). It encompasses the most fundamental human instincts and desires, deeply intertwined with our bodily experiences (Zanga, 2022). While disabled children may exhibit different behaviours compared to their neurotypical peers, their sexual development follows the same patterns as typically developing children (Shukor & Osman, 2022).

With the global commitment of the Convention on the Rights of Persons with Disabilities (CRPD), persons with disabilities have the right to be provided with sexual and reproductive health care and programmes, with no less range or quality than other persons (United Nations, 2006). To ensure full protection and empowerment of children's agency, it is imperative to provide them with appropriate and timely sexual health education (Tohit & Haque, 2024).

Over the past few decades, the conceptualisation of sexuality education for young learners has undergone a significant transformation. Initially, sexuality education predominantly focused on topics pertaining to sexual activity, such as reproduction, unintended pregnancy, and sexually transmitted diseases (Kantor & Lindberg, 2020). Emphasis was placed on sexual risk-avoidance, promoting abstinence until marriage as the only morally acceptable and socially endorsed behaviour (Grasso & Trumbell, 2021; Razali et al, 2017).

With the increasing awareness of human rights and gender equality, the paradigm shifted towards a Comprehensive Sexuality Education (CSE) approach. In CSE, sexuality is a fundamental aspect of human life with several dimensions that cannot be understood without respecting gender and diversity, human rights, and the exercise of independent decision-making (Seiler-Ramadas et al., 2021). CSE aimed to provide comprehensive (including cognitive, emotional, physical, and social aspects), evidence- (scientifically accurate) and curriculum-based (age and developmentally appropriate, incremental) sexual and reproductive health information to empower young people to make informed choices while enjoying their well-being (UNESCO, 2018).

Building upon the foundations of CSE, Holistic Sexuality Education (HSE) has emerged as an approach to promote a more inclusive and well-rounded approach to sexual health and well-being. The Sexuality Information and Education Council of the United States (SIECUS, 2017) describes that HSE encourages a multifaceted view and relational dimensions of sexuality to promote the development of healthy attitudes and behaviours that contribute to healthy personal well-being and relationships. According to UNESCO (2018), a holistic strategy to deliver sexuality education engages young people in learning about and shaping their sexual

and reproductive futures through various formal and informal settings, including schools, families, communities, and health services.

### ***Obstacles and Challenges***

Nevertheless, the challenges and obstacles faced by both children and adults have been well-documented in the literature. Children with special needs in Malaysia are generally referred to as '*anak syurga*' (Children of Paradise), a term that conveys innocence and spiritual purity (Lee et al., 2024). They are often seen as perpetual minors lacking sexual desires or as dangerous individuals unable to control their instincts. These stigmas frequently lead to their exclusion from sexuality education. (Kammes et al., 2022; Lam et al., 2022). Supporting this notion, Lee and colleagues (2024) found that Malaysian children with special educational needs receive inconsistent sexual health education at home and school. The content is mostly abstinence-only, with minimal coverage on consent and relationships.

Parents and caregivers have been reported to hesitate in providing sexuality education to these children due to uncertainty about what, when, and how to teach (Kamaludin et al., 2022). Many report lacking the resources and knowledge needed to communicate effectively about sexual development, especially with children with disabilities (Eunice & Zhooriyati, 2022; Güven, 2021). Some parents also expressed minimal expectations for their children's development, deeming sexuality education unnecessary for them. (Sham et al., 2020). This conception could situate the children within a restrictive and risk-averse framework, conditioning them toward passivity, compliance, trust in others, and affection for caregivers and strangers, rather than promoting control and autonomy over their sexuality (Shamrock & Ginn, 2021).

In schools, teachers report that current sexuality education resources are largely designed for neurotypical learners, with limited accommodations for learners with learning challenges, such as autism (Bloor et al., 2022). Teachers have expressed discomfort and concerns in teaching sex-related topics in several studies (Bloor et al., 2022; Kamaludin et al., 2022; Noh & Bakar, 2023). These challenges arise from the sensitivity of the subjects, lack of readiness, and inadequate training in explaining sexual health education concepts, and concerns about the harmful repercussions of making sexual content available to youth with special needs (Bloor et al., 2022; Kamaludin et al., 2022; Sobberi et al., 2022).

Moreover, academic discussions on sexuality education for children with disabilities tend to focus on the problems, challenges, and risks (Idayanti & Natalia, 2022). This deficit-focused perspective runs counter to the foundational aims of sexual health. According to the World Health Organisation (2006), promoting sexual health and well-being necessitates a respectful and positive approach to sexuality and sexual relationships, and the ability to have pleasurable and safe sexual experiences, free from coercion, discrimination, and violence. However, scholarly attention remains limited in addressing positive dimensions of sexuality, such as pleasure, body image, and sexual agency through a sex affirming perspective (Ali et al., 2020; Berdychevsky & Carr, 2020). In advancing a timely and effective comprehensive sexuality education program for children with special needs, scholars have stressed the need to integrate established models, theories, and frameworks (Brown et al., 2020). A multilevel contextual connection in pedagogy, teaching, and learning is underrepresented and necessary (Kamaludin et al., 2022; Suárez et al., 2022). Tohit and Haque (2024) also emphasise the importance of collaborative efforts among diverse stakeholders in promoting inclusive, evidence-based CSE.

Their analysis links CSE with Sustainable Development Goal (SDG) 17, which emphasises the multi-sectoral cooperation in achieving sustainable social development.

To rectify the situation, there is a pressing need to identify the existing strengths and gaps in stakeholders' preparedness to support sexuality education for this population. Hence, this study aims to assess the knowledge and skills among three key stakeholders: parents, teachers, and healthcare providers regarding the core themes of HSE for Malaysian primary school children with learning disabilities. The findings will provide empirical insights to identify areas where knowledge or skills may be limited.

## Methods

### *Research Design*

This study employed a quantitative self-report method, using an anonymous, cross-sectional online survey, to assess stakeholders' perceived levels of knowledge and skills relevant to delivering HSE to children with LD. Data was collected through a self-administered online questionnaire distributed via Google Form.

### *Sample and Sampling*

Stratified random sampling was used to recruit 415 stakeholders who work directly with primary school children with learning difficulties (LD) in Malaysia. The sample groups were drawn from various contexts determined by Bronfenbrenner's ecological framework developed in 1994, focusing on individuals from different levels of environmental systems (micro-, meso-, and exo-) that affect the Malaysian primary school children with LD to acquire sexual health knowledge and skills. The inclusion criteria for each group are presented in Table 1.

**Table 1: Inclusion Criteria for Each Group of Samples**

<b>Environmental System</b>	<b>Representing Sample</b>	<b>Inclusion Criteria</b>
<b>Microsystem</b> Home	Parents/caregivers	Have a child at primary school age (ages of 7 to 14) with an OKU card (under the Learning Disability category)
<b>Mesosystem</b> School	Teachers	Currently teaching the subject of sexuality education/special education syllabus to primary school children with LD.
<b>Exosystem</b> Community	Paediatricians, Occupational Therapists	Currently working with primary school-aged children with LD on the matter of sexuality education.

As a result, Table 2 presents the demographics of the participating respondents. A total of 415 respondents participated: 312 parents (75.2%), 76 teachers (18.3%), and 27 healthcare providers (6.5%). Most parents (79.2%) and teachers (50%) were aged 31–40, while healthcare providers were mainly aged 21–40. Females predominated among parents (73.7%), teachers (85.5%), and healthcare providers (92.6%). Chinese participants made up the majority across all groups. Most participants held at least a bachelor's degree, with teachers (73.7%) and healthcare providers (66.7%) being the most represented.

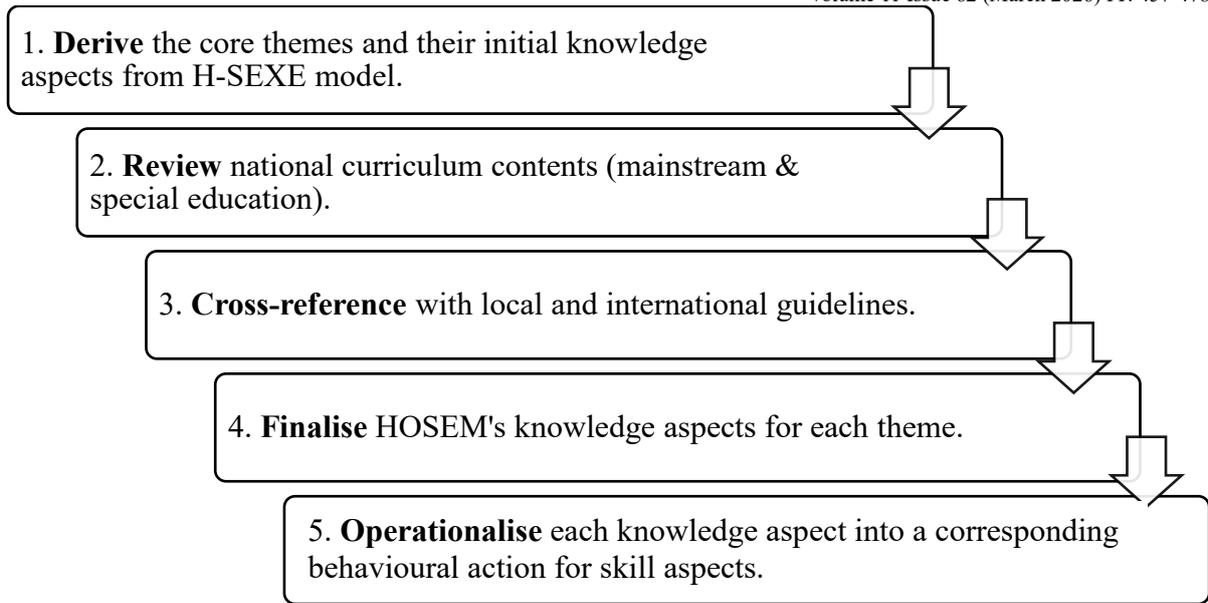
**Table 2: Sample Demographic Characteristics (n=415)**

<b>Stakeholders</b>	<b>n (415)</b>		<b>%</b>			
Parents	312		75.2			
Teachers	76		18.3			
Healthcare providers	27		6.5			
	<b>Parents</b>		<b>Teachers</b>		<b>Healthcare providers</b>	
	<b>n</b>	<b>%</b>	<b>n</b>	<b>%</b>	<b>n</b>	<b>%</b>
<b>Age</b>						
21 to 30	0	0	19	25.0	11	40.7
31 to 40	247	79.2	38	50.0	11	40.7
41 to 50	65	20.8	13	17.1	5	18.5
50 and above	0	0	6	6.1	0	0
<b>Gender</b>						
Male	82	26.3	11	14.5	2	7.4
Female	230	73.7	65	85.5	25	92.6
<b>Race</b>						
Malay	80	25.6	11	14.5	10	37.0
Chinese	197	63.1	55	72.4	15	55.6
Indian	32	10.6	9	11.8	2	7.4
Others	2	0.64	1	1.3	0	0
<b>Highest Education Level</b>						
SPM/STPM	55	17.6	0	0	0	0
Diploma	67	21.5	3	4	2	7.4
Bachelor's degree	179	57.4	56	73.7	18	66.7
Master's degree	9	2.9	16	21.1	7	25.9
Doctoral degree	0	0	0	0	0	0
Others	2	0.6	1	1.32	0	0

### *Questionnaire*

A survey questionnaire was developed for this study to assess stakeholders' perceived level of knowledge and skills related to HSE delivery. Section A featured 6 items on participants' demographic information. Section B contained 32 items, illustrating the essential knowledge aspects across four core themes of HSE, assessing the stakeholders' cognitive dimensions. Section C also contained 32 items, focusing on the corresponding skills required to deliver the knowledge within each theme and assessing the stakeholders' performance dimensions.

The development of the questionnaire items for knowledge aspects in Section A and skills aspects in Section B was guided through a multi-stage, theory-informed, and evidence-based process. The procedure is summarised in Figure 1.



**Figure 1: Procedure for Developing the Knowledge and Skills Aspects**

#### *Development of Questionnaire Items – Knowledge Aspects*

Firstly, four core themes were derived from a holistic sexuality education model (H-SEXE), developed by Loh and colleagues (2024). The H-SEXE model is a conceptual framework developed to guide further planning, decision-making, and implementation of sexuality education for preschool, primary school, and secondary school children with special educational needs from the ground-root and the top-down level (Loh et al., 2024). The four themes are: (1) Human Body and Development, (2) Gender and Identity, (3) Emotions and Relationships, and (4) Sexual Development and Behaviour, which is presented in Figure 2.

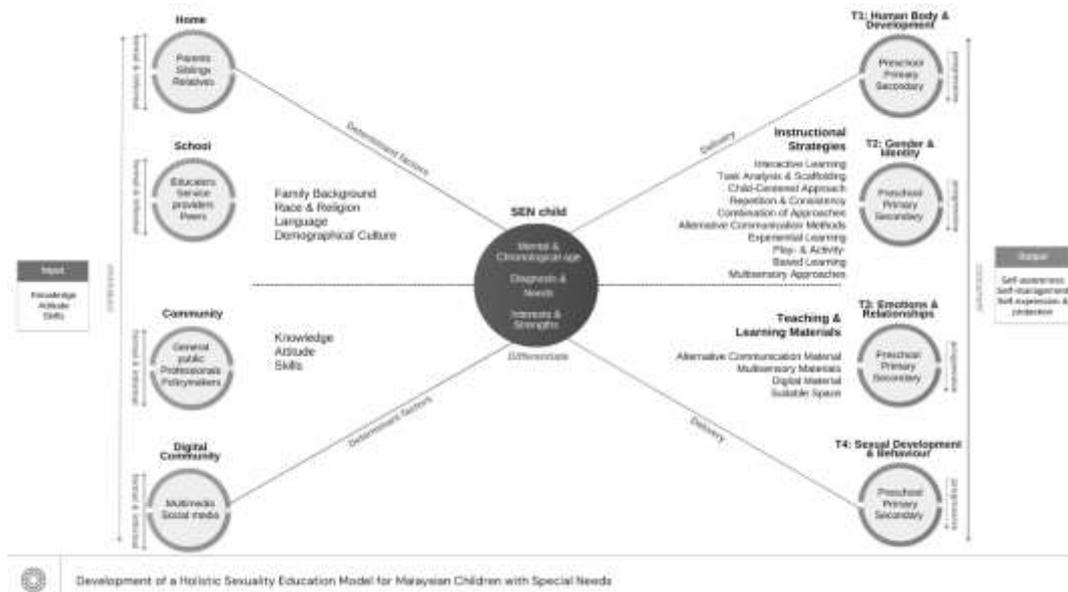


Figure 2: H-SEXE Model

The model suggested brief topics for each theme across three performance standards: self-awareness, self-management, and self-expression & protection. In this study, the researcher adopted the topics outlined at the primary school level as the foundational structure from which the preliminary questionnaire items for knowledge aspects were identified. The topics suggested by the H-SEXE model are presented in Figure 3.

Topics												
Level	Theme 1: Human Body & Development			Theme 2: Gender & Identity			Theme 3: Emotions & Relationships			Theme 4: Social Development & Behaviour		
Output	Self-Awareness	Self-Management	Self-Expression & Protection	Self-Awareness	Self-Management	Self-Expression & Protection	Self-Awareness	Self-Management	Self-Expression & Protection	Self-Awareness	Self-Management	Self-Expression & Protection
Pre-												
Pr-	- Understand private parts - Early puberty	- Managing hygiene of private parts and during early puberty	- Safe and unsafe touch - Communicate needs - Rights and consent	- Self-identity (self-worth) - Rights of self and others - Gender roles	- Gender-based dressing	- Cross-gender boundaries - Gender equality	- Emotion regulation methods (sexual desire) - Types of relationships	- Emotion regulation skills	- Relationship boundaries - Self-advocacy - Mutual respect	- Types of private and public space and behaviours	- Appropriate clothing (Dress-driven)	- Applying private and public space and behaviours
Sec-												

Figure 3: Topics Outlined in the H-SEXE Model

The researcher then reviewed the current national Reproductive and Social Health Education (PEERS) syllabus for mainstream students, as well as the modified Malaysian National School Standard Curriculum (KSSR) in subjects relevant to sexuality education for students with special needs. The researcher reviewed the contents taught from Year 1 to Year 6 in both syllabi and identified topics currently taught, partially taught, or missing within the Malaysian education system for primary school children. The researcher then refined the knowledge

aspects to ensure that they reflected the Malaysian educational context, while also being omitted from the current special education system.

Additionally, the list of topics was further cross-referenced with relevant and established local and international sexuality education guidelines. The researcher examined the content areas covered in each guideline to determine the essential topics of sexuality education introduced at the primary school level. The referenced guidelines include:

- “Live Life, Stay Safe” Training Module on Reproductive Health for Children and Adolescents with Disability, Ministry of Health, Malaysia, 2009
- ACE (Accurate, Comprehensive, Effective) Sex Education Module, National Population and Family Development Board, Malaysia, 2016
- The Practical Guide to Love, Sex and Relationships, Australian Research Centre in Sex, Health, and Society (ARCSHS), La Trobe University, Australia, 2015
- Family Life and Sexual Health (FLASH) Elementary Curriculum, Public Health Department in Seattle & King County, United States, 2021
- Comprehensive Sexuality Education (CSE) Toolkit, Norwegian Church Aid, Norway, 2022

Lastly, insights from the H-SEXE model, curriculum review, and international comparisons were synthesised to formulate the final set of knowledge aspects for each HOSEM theme.

### ***Development of Questionnaire Items – Skill Aspects***

The rationale for assessing the stakeholders’ level of skills was to explore their functional ability to deliver the sexuality education knowledge to the children with learning disabilities. After the knowledge aspects for each theme were identified, each knowledge statement was then operationalised into a corresponding skill to reflect their perceived competency. Action-oriented verbs such as “explain”, “demonstrate”, “introduce”, and “describe” were used to operationalise the corresponding skills needed to deliver the respective holistic sexuality education knowledge to the children with learning disabilities. A summary of the finalised knowledge areas and skills corresponding to each core theme is presented in Table 3.

### ***Validity and Reliability of Instrument***

After the review and approval from the researcher’s supervisor, expert validation was subsequently obtained from three panels with relevant expertise to ensure the validity and reliability of these items. The results demonstrated excellent content validity, with an S-CVI/Ave of 0.99 for relevance, 0.93 for clarity, and a CVR of 0.97 for essentiality.

### ***Data Analysis***

The collected data were analysed descriptively. Frequency, percentage, mean, and standard deviation were computed to summarise the participants’ self-reported levels of knowledge and skills across the four core themes of HSE. A categorisation of “low”, “moderate”, and “high” has been established to ascertain the overall score and the corresponding category within which it falls.

**Table 3: Summary of the Knowledge and Skills Areas Corresponding to Each Core Theme**

<b>Knowledge Aspects</b>			
<b>Theme 1: Human Body and Development</b>	<b>Theme 2: Gender and Identity</b>	<b>Theme 3: Emotions and Relationships</b>	<b>Theme 4: Sexual Development and Behaviour</b>
Terminology of private body parts	Gender roles and differences	Relationship types and roles	Private vs. public vs. virtual spaces and behaviours
Functions of private body parts	Gender rights and equality	Relationship influences	Appropriate vs. inappropriate behaviour
Safe vs. unsafe touches	Self-identity	Human emotions and desires	Common child sexual behaviours
Safety measures	Self-confidence	Emotion regulation techniques	Factors of behaviour
Personal hygiene	Self-worth	Sexual emotion expression norms	Risks and consequences
Genital hygiene	Self-image	Relationship etiquette and manners	Appropriate sexual behavioural teaching
Pubertal changes	Age-appropriate clothing	Relationship boundaries	Inappropriate sexual behavioural redirection
Menstrual cycle	Social interaction boundaries	Peer influence management	Decision-making and reasoning skills
<b>Skills Aspects</b>			
<b>Theme 1: Human Body and Development</b>	<b>Theme 2: Gender and Identity</b>	<b>Theme 3: Emotions and Relationships</b>	<b>Theme 4: Sexual Development and Behaviour</b>
Teach correct terms for private body parts	Explain gender roles and differences	Describe relationship types and roles	Distinguish private vs. public vs. virtual spaces and behaviours
Explain functions of private body parts	Teach gender rights and equality	Explain good vs. bad relationship influence	Explain appropriate vs. inappropriate behaviour
Teach safe vs. unsafe touches	Develop self-identity	Explain emotions and needs	Explain sexual behaviours
Introduce “No”, “Go”, “Tell”	Instil self-confidence	Teach appropriate emotional expressions	Explain the behaviour's reasons

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Explain pubertal changes	Instil self-worth	Practice emotion regulation techniques	Explain risks and consequences
Demonstrate genital care	Foster self-image	Teach relationship etiquette and manners	Promote self-dignity
Demonstrate personal hygiene	Teach appropriate clothing	Explain relationship boundaries	Redirect inappropriate behaviour
Explain menstrual cycle	Explain boundaries	Demonstrate ways to resist peer pressure	Practice scenario handling

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## Results

### *Stakeholders' Knowledge*

Table 4 presents the mean scores, standard deviations, and classifications of stakeholders' perceived knowledge across four core themes in HSE. The results notably varied between groups. Overall, parents consistently reported the lowest knowledge levels across all themes, with mean scores ranging from 2.56 to 2.73, indicating moderate levels of knowledge. Teachers reported slightly higher perceived knowledge than parents, with moderate scores ranging from 3.29 to 3.64 across all themes. Healthcare providers, on the other hand, reported the highest level of perceived knowledge, particularly in the "Human Body and Development" theme ( $M = 3.86$ ,  $SD = 0.66$ ), which reached the high classification. They also scored in the high range for the "Emotions and Relationships" theme ( $M = 3.73$ ,  $SD = 0.64$ ).

Among the four themes, the "Sexual Development and Behaviour" theme received the lowest mean scores across all stakeholder groups: parents ( $M_p = 2.56$ ), teachers ( $M_t = 3.29$ ), and healthcare providers ( $M_{hcp} = 3.51$ ). Conversely, "Human Body and Development" emerged as the highest area of perceived knowledge, particularly among teachers ( $M_t = 3.64$ ) and healthcare providers ( $M_{hcp} = 3.86$ ).

### *Stakeholders' Skills*

Table 5 presents the mean scores, standard deviations, and classifications of stakeholders' perceived skills in delivering Holistic Sexuality Education (HSE) across four thematic areas. Overall, perceived skill levels were lower than knowledge levels across all stakeholder groups. Parents consistently reported the lowest skill scores, with means ranging from 2.28 to 2.38, indicating levels that fall within the low to moderate range. Notably, their skills related to "Sexual Development and Behaviours" were classified as low ( $M = 2.28$ ,  $SD = 0.85$ ). Teachers demonstrated moderate skill levels in all themes, with mean scores ranging from 2.80 to 3.04. Healthcare providers scored slightly higher than other groups, ranging from 3.14 to 3.42, but remained within the moderate classification. Among all themes, "Sexual Development and Behaviours" again emerged as the lowest-rated area across all groups: parents ( $M_p = 2.26$ ), teachers ( $M_t = 2.80$ ), and healthcare providers ( $M_{hcp} = 3.14$ ).

### *Discrepancy Between Stakeholders' Knowledge and Skills*

A comparison of stakeholders' perceived knowledge and skill sets is presented in Table 6. The results reveal a consistent discrepancy across all four HSE themes. In each stakeholder group, skill scores were consistently lower than the knowledge scores within each stakeholder group. This gap was most pronounced among parents, whose overall knowledge scores were moderate ( $M_p = 2.56$ – $2.73$ ) but not reflected in their overall skills levels ( $M_p = 2.28$ – $2.38$ ). Teachers also reported moderate knowledge ( $M_t = 3.29$ – $3.64$ ) across assessed themes, yet their skill scores remained slightly lower ( $M_t = 2.80$ – $3.04$ ). This result reflects teachers' limited confidence and competency in delivering sexuality related content. Healthcare providers reported the highest overall scores but still demonstrated a similar gap. For instance, in "Sexual Development and Behaviours", their skills ( $M_{hcp} = 3.14$ ) lagged behind knowledge ( $M_{hcp} = 3.51$ ).

**Table 4: Overall Mean, Standard Deviations, and Classification of Stakeholders' Level of Knowledge in Delivering HSE by Theme (n=415)**

Themes Knowledge Aspects	Parents (n=312)			Teachers (n=76)			Healthcare Providers (n=27)		
	Mean	SD	Classification	Mean	SD	Classification	Mean	SD	Classification
<b>Human Body and Development</b> - Private parts, safe vs. unsafe touches, safety measures, pubertal changes	2.73	0.83	Moderate	3.64	0.80	Moderate	3.86	0.66	High
<b>Gender and Identity</b> - Gender roles and rights, self-identity and self-worth, gender-based social boundaries	2.67	0.89	Moderate	3.55	0.85	Moderate	3.62	0.72	Moderate
<b>Emotions and Relationships</b> - Emotions and needs, regulation and expression, peer influence, relationship management strategies	2.62	0.88	Moderate	3.43	0.89	Moderate	3.73	0.64	High
<b>Sexual Development and Behaviours</b> - Public, private, and virtual spaces, behaviours, risks and consequences, decision-making strategies	2.56	0.89	Moderate	3.29	0.85	Moderate	3.51	0.72	Moderate

Note: Mean Scores were Classified as Low (1.00–2.33), Moderate (2.34–3.66), and High (3.67–5.00) to Indicate Levels of Knowledge or Skill

**Table 5: Overall Mean, Standard Deviations, and Classifications of Stakeholders' Perceived Skills in Delivering HSE by Theme (n=415).**

Themes/ Skills Aspects	Parents (n=312)			Teachers (n=76)			Healthcare Providers (n=27)		
	Mean	SD	Classification	Mean	SD	Classification	Mean	SD	Classification
<b>Human Body and Development</b> - Understand private parts and pubertal changes, recognise safe vs unsafe touches, practise safety measures	2.38	0.81	Moderate	3.04	0.94	Moderate	3.27	0.80	Moderate
<b>Gender and Identity</b> - Discuss gender roles and rights, develop self-identity and self-worth, and demonstrate ways to respect gender-based social boundaries	2.36	0.83	Moderate	2.98	0.90	Moderate	3.42	0.76	Moderate
<b>Emotions and Relationships</b> - Explain emotions and needs, regulation and expression, peer influence, and suggest relationship management strategies	2.35	0.83	Moderate	2.94	0.89	Moderate	3.31	0.76	Moderate
<b>Sexual Development and Behaviours</b> - Differentiate public, private, and virtual spaces, behaviours, explain risks, consequences, and practice decision-making strategies	2.28	0.85	Low	2.80	0.92	Moderate	3.14	0.80	Moderate

Note: Mean Scores were Classified as Low (1.00–2.33), Moderate (2.34–3.66), and High (3.67–5.00) to Indicate Levels of Knowledge or Skill

**Table 6: Comparison of Stakeholders' Perceived Knowledge and Skill Sets Across Themes (n=415).**

Themes/ Skills Aspects	Parents (n=312)			Teachers (n=76)			Healthcare Providers (n=27)		
	Mean	SD	Classificati on	Mean	SD	Classificati on	Mean	SD	Classificati on
<b>Human Body and Development</b>									
Knowledge	2.73	0.83	Moderate	3.64	0.80	Moderate	3.86	0.66	High
Skills	2.38	0.81	Moderate	3.04	0.94	Moderate	3.27	0.80	Moderate
<b>Gender and Identity</b>									
Knowledge	2.67	0.89	Moderate	3.55	0.85	Moderate	3.62	0.72	Moderate
Skills	2.36	0.83	Moderate	2.98	0.90	Moderate	3.42	0.76	Moderate
<b>Emotions and Relationships</b>									
Knowledge	2.62	0.88	Moderate	3.43	0.89	Moderate	3.73	0.64	High
Skills	2.35	0.83	Moderate	2.94	0.89	Moderate	3.31	0.76	Moderate
<b>Sexual Development and Behaviours</b>									
Knowledge	2.56	0.89	Moderate	3.29	0.85	Moderate	3.51	0.72	Moderate
Skills	2.28	0.85	Low	2.80	0.92	Moderate	3.14	0.80	Moderate

Note: Mean Scores were Classified as Low (1.00–2.33), Moderate (2.34–3.66), and High (3.67–5.00) to Indicate Levels of Knowledge or Skill

## Discussion

This study examined the stakeholders' perceived knowledge and skills in delivering Holistic Sexuality Education (HSE) to Malaysian children with Learning Disabilities (LD) through a self-reported survey measure. The results revealed that the stakeholders demonstrated overall moderate levels of both knowledge and skills across the four targeted themes. However, performance varied among stakeholder groups and the four theme domains. The findings will serve as empirical data to inform the future development of holistic sexuality education teaching guide that is practical and relevant for these stakeholders.

Among the three stakeholder groups, healthcare providers consistently scored the relatively highest in both knowledge and skills across all themes. Their clinical background in health and therapy may explain their relative knowledge and skills in dealing with developmentally complex topics. Hazariah et al. (2020) noted that the information on sexual and reproductive health is primarily provided by the Malaysian Ministry of Health, alongside the Ministry of Women, Family, and Community Development, as well as non-governmental organisations such as the Federation of Reproductive Health Associations. Hence, healthcare practitioner members, such as paediatricians and occupational therapists, are more likely to have access to timely SRH information. Similarly, Urban et al. (2024) indicate that occupational therapists are trained to assess and treat clients concerning sensory processing, life roles, and body functions, all of which are essential in sexuality education. These have explained their relatively high perceived level of knowledge and skills compared to parents and teachers.

However, healthcare providers' perceived knowledge and skills are still yet at an optimal level. Both levels of knowledge and skills generally fell within a moderate range, which indicates a strong message for professional improvement. This finding is similar to the finding from Tamas and colleagues (2019), which showed that professionals generally had average attitudes towards sexuality development and education of persons with intellectual disabilities. The study further explained that education for professionals in the supporting area of sexuality is often lacking, which prevents them from developing a firm attitude regarding this issue.

On the other hand, parents demonstrated the lowest level of knowledge and skills across all themes. This finding is consistent with several previous studies. Parents are often being viewed as the primary sexuality education provider (Balakrishnan & Singh, 2023; Eunice & Zhooriyati, 2022; Sham et al., 2020; Zanga, 2022), yet they often reported being the least competent in addressing such topics due to various factors. For instance, Tamas et al. (2019) found that parents indicate fewer liberal attitudes towards sexuality development and education for children with intellectual disabilities. Sham and colleagues (2020) stressed that many parents reported misunderstanding in sexuality education, thinking that it is solely a discussion about sex. Kamaludin and colleagues (2022) noted that parents reported inadequate knowledge, misperception about their children's sexuality development, and viewing sexuality education as less necessary due to time constraints. These factors led to their limited involvement in delivering comprehensive sexuality education to the children. The results have called for the need to provide parents with training and support to enhance their knowledge and skills in addressing these complex topics.

Moreover, the findings of this study show that teachers perceive themselves as neither exceptionally strong nor weak when assessed across various knowledge and skill areas. A comparable study conducted by Wu and Zheng (2020) revealed that while 70% of special

education teachers in China recognised the importance of sexuality education, only half had practical experience. Similarly, teachers reported often feel less skilled in conveying sexuality education to students with intellectual disabilities due to inadequate training (Maszarry et al., 2021), a lack of compatible teaching guidelines and resources for these children (Strnadová et al., 2022), and the challenge of simultaneously teaching students with varying intellectual abilities and developmental stages on such a complex subject (Nelson et al., 2020). Furthermore, teachers often struggle to determine whether students have grasped the material being taught (Borawska-Charko et al., 2023). As such, the results have highlighted a pressing need for actions to improve and support teachers' tasks.

In terms of the knowledge aspect, this study found that knowledge related to the "Human Body and Development" theme was the highest among the respondents. This result can be understood through various studies. Crockett and colleagues (2019) highlighted that information about pubertal development is typically embedded within formal health or sexuality curricula in schools and community settings, and it is also widely accessible through supplementary sources such as websites and books. Wan Nawi et al. (2021) similarly noted that sexuality education aligns closely with hygiene education due to its biological foundations, and the frequently discussed topics include the identification of body parts. Thus, the prevalence of information likely contributed significantly to this finding.

Furthermore, emotional literacy in sex education is essential for an informed and nuanced exchange of knowledge and perceptions of sexuality (Seiler-Ramadas et al., 2021). However, consistent among the stakeholder groups, the self-rated knowledge in delivering the "Emotions and Relationships" theme was relatively moderate. A similar finding was found from Borawska-Charko et al. (2023) that teaching practical and concrete aspects about sex, such as body awareness, is easier than explaining the abstract and subjective aspects, such as the emotional nature of relationships and recognition of one's own and others' feelings. This has revealed that stakeholders generally perceive their understanding of addressing topics relating to emotions and relationships is somewhat limited.

In terms of skill level, the "Gender and Identity" theme scored the highest. This may reflect the increased discussion on gender identity in education lately. A study by Wan Nawi and colleagues (2021) emphasised that most teachers view the teaching of gender identity, differences, social etiquette, and boundaries as crucial elements in sexuality education for young learners. However, this finding contrasts with the results from Lung et al. (2021), who indicated that healthcare providers less frequently discussed gender identity and sexual orientation topics in clinical sessions. Interestingly, much existing literature discourse on gender and identity tends to concentrate on sexual preferences, queer identities, and gender expression (Herrick & Datti, 2022; Paechter, 2021; Suárez et al., 2022). However, the current study explicitly addresses recognition of gender differences, understanding of gender rights, exploration of self-identity, and self-worth. The finding suggests that Malaysian stakeholders are perhaps more comfortable addressing foundational aspects of gender identity rather than more complex or religion-sensitive topics in the local context.

Nevertheless, consistent with the knowledge aspect, stakeholders perceived the lowest skills in delivering the "Sexual Development and Behaviour" theme. This indicates a concerning lack of preparedness to guide children's sexual behaviour. Sexual behaviour is often reported as a challenging topic to teach. Study from Strnadová et al (2020) reflected that parents generally refused to acknowledge masturbation as a natural aspect of self-regulation and consequently

avoided their children with intellectual disability from engaging with relevant topic. Borawska-Charko (2023) also noted that teachers struggled to effectively manage behaviours such as public masturbation among students with profound disabilities and to educate them on appropriate contexts for these activities. Stakeholders frequently lack the necessary language, confidence, or framework to teach sensitive sexual content, especially to children with disabilities (Linzarini et al., 2022).

Lastly, knowing something and doing something can be two distinct processes. Across all themes and stakeholder groups, the knowledge scores consistently exceeded skill scores, indicating a clear discrepancy between understanding concepts and applying them in real-world teaching scenarios. Diah and Samsuddin (2022) emphasised that teaching sexuality education to children with disabilities necessitates a distinct approach compared to mainstream education. Study by Strnadová and colleagues (2022) further noted that, despite widespread recognition of the importance of sexuality education, teachers frequently face dilemmas in delivering the curriculum effectively without inadvertently encouraging inappropriate behaviors. Additionally, although healthcare providers are often regarded as the most credible sources for addressing misinformation and delivering accurate information, they typically lack sufficient skills to engage effectively in these conversations with children with disabilities (Lung et al., 2021; Schmidt et al., 2021). Kamaludin et al. (2022) also found in their study that although all parents acknowledged their children's emerging sexuality during adolescence, they admitted that translating this awareness into effective action was challenging.

### **Limitations**

While this study offers empirical insights into the current state of stakeholders' competencies in delivering holistic sexuality education (HSE), several limitations should be acknowledged. Firstly, the study relied on self-reported data, which may be subject to response biases, as participants might overestimate or underestimate their actual knowledge and skills. Secondly, although the sample included parents, teachers, paediatricians, and occupational therapists, it may not fully capture the diversity of all relevant stakeholders involved in HSE, potentially limiting the generalisability of the findings. Lastly, the study's cross-sectional design offers a momentary view, which limits the ability to observe changes in knowledge and skills over time or following training interventions.

### **Conclusion**

The study underscores the necessity for a contemporary and contextually relevant approach to delivering sexuality education to children with learning disabilities. While the findings indicate a foundational awareness of the subject among stakeholders, they also point to the need for further capacity building to ensure more effective and confident delivery. Efforts should focus on fostering interdisciplinary collaboration and integrating multidimensional content to provide comprehensive, inclusive support for the sexuality development of children with learning disabilities.

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- Acknowledgements:** The authors would like to express their sincere gratitude to all participating stakeholders for providing valuable insights and support to the study.
- Funding Statement:** No Funding
- Conflict of Interest Statement:** The authors declare that there is no conflict of interest regarding the publication of this paper. All authors have contributed to this work and approved the final version of the manuscript for submission to the International Journal of Education, Psychology and Counseling (IJEPC).
- Ethics Statement:** Option A (For Studies Involving Human Participants)  
This study was conducted in accordance with ethical research standards. All procedures involving human participants were reviewed and approved by the Research Ethics Committee (UMREC) at the University of Malaya (Reference Number: UM.TNC2/UMREC\_3209). Informed consent was obtained from all participants prior to data collection. Participation was voluntary, and respondents were assured of confidentiality and anonymity. The data collected were used solely for academic purposes.
- Author Contribution Statement:** All authors contributed significantly to the development of this manuscript. The first author was responsible for the drafting, data collection, analysis, and interpretation of results. The second author contributed to the conceptualisation and overall supervision of the study. All authors read and approved the final version of the manuscript prior to submission.
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