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Children's Labelling of Intimate Body Parts and Contact: An Exploratory Study

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Abstract:

Introduction: Successful prosecution of child sexual abuse cases often hinges on anatomically detailed descriptions of the alleged sexual contact. However, child victims frequently struggle to name and describe the involved body parts and contact. This cross-sectional exploratory study aimed to understand how children describe sexual body parts and the factors related to their knowledge.

Methods: Utilizing a newly developed semi-structured questionnaire administered in Mandarin, written and verbal reports were collected from a cohort of Taiwanese parents (n = 378) and children (n = 381; 48% female), yielding a total of N = 409 family dyads. This study investigated: (1) children's labeling and description of genitalia and intimate bodily contact; (2) parental instruction alongside parent-child bodily contact; and (3) the variations in these factors across different age groups and genders.

Results: Quantitative analyses showed that most children could identify and describe at least one sexual body part, with greater familiarity with their own gender. Surprisingly, older children did not demonstrate superior knowledge of body parts or functions. Intimate bodily contact with parents (*i.e.*, hugs and kisses) was positively related to children's knowledge of sexual body parts.

Discussion: Most children could label sexual body parts and understood some functions, though knowledge was stronger for their own gender. Parents, especially mothers, were primary educators, yet knowledge gaps between parents and children were common. Limited awareness of self-protection underscores the need for clearer parent–child communication and structured school-based body-safety education.

Conclusion: This study, one of the first in East Asia to examine children's descriptions of sexual body parts and bodily contact, highlights the importance of consistent, clear communication between parents and children about these topics.

Keywords: Body knowledge, Body safety, Sexual knowledge, Sexual abuse, Child testimony, Investigative interviewing.

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1. INTRODUCTION

Prosecution and conviction of child sexual abuse requires evidence indicating that the victim's genitalia were touched or penetrated by the alleged perpetrator, or that the victim touched or penetrated the perpetrator's genitalia. Yet considering that physical and medical evidence are often lacking in child sexual abuse cases, anatomically detailed descriptions of the alleged bodily contact are necessary for successful prosecution and conviction. This is further complicated by delays in reporting and repeated experiences of abuse, especially in incest cases. In child sexual abuse cases, alleged victims often struggle with naming and describing the body parts and bodily contact that occurred. Past field research shows that children often use vague or idiosyncratic terms to name or describe genitalia (*e.g.*, 'his thing', 'down there', 'my toilet part') and sexually abusive contact (*e.g.*, 'played', 'put', 'messed') [1, 2]. Burrows and colleagues found that even children in their late teens had difficulty naming their sexual body parts clearly [3].

Findings from laboratory or analogue studies are mixed. Some findings indicate that children can respond to 'abuse-relevant' questions about touch very accurately [4, 5]. However, other studies have shown contrasting results, especially when human figure diagrams or body maps were used to elicit reports of touch from non-abused children [6-8]. These mixed findings also revealed developmental differences in the ways children accurately report bodily contact. Young children may not have the linguistic or cognitive abilities necessary to recognize behaviors as abusive, and older children may feel ashamed or embarrassed about the acts involved. Further, even though older children are expected to have learned about sexual body parts and functions, sexual behaviors, reproduction, and sexual abuse prevention, they may not understand such activities as sexual intercourse [9]. Reviewing research on the use of interviewing aids when questioning children about touches, Poole and colleagues proposed that younger children may have difficulty reporting touches even with the help of props such as anatomical dolls and body diagrams because they have difficulty understanding and encoding bodily contact, especially penetration [10]. If young children indeed lack the semantic and conceptual knowledge needed to correctly identify touches [11, 12], they might fail to remember and report bodily contact that has occurred (because they do not find them to be memorable) or erroneously report touches because they acquiesced to questions about 'touch'.

In investigative interviews exploring allegations of child sexual abuse, interviewers must elicit specific details about any sexually abusive contact that might have occurred. Some interviewers resort to overzealous questioning to clarify genital terminology, which may damage the usefulness of the alleged victim's testimony for prosecution [13, 14]. An alleged victim who reports 'he messed me down there' would be expected to clarify not only 'down there' and the action 'messed,' but also which body part was used by the perpetrator, and the force and duration of the action. It is not surprising, therefore, that investigative interviewers often resort to using aids such as anatomical dolls and human body diagrams, yet the benefits of such aids may be outweighed by the risks of suggestion and suggestibility [10]. Investigative interviewers often must ask direct questions about body parts and the alleged contact with or without the use of aids. When children either do not understand molestation or penetration or do not understand a related word as intended, such questions may lead to errors of commission and omission. Commission errors occur when children erroneously acquiesce to the cue of a contact-related term (*e.g.* Yes response to "Did he poke you with his pi pi?", when the child actually does not understand 'poke') whereas children commit omission errors when they fail to report bodily contact that actually occurred because they do not associate the contact-related word with their experiences (*e.g.* No response to "Did he poke you with his pi pi?", because the child remembered the contact as 'pushed'). Sullivan and colleagues found that some miscommunications in child sexual abuse trials were related to "how" questions on sexually abusive acts, although it is unclear whether children could be more informative about other types of questions [15]. A recent study by Szojka and colleagues on questions posed by lawyers to alleged child victims in court showed that questions about the functions of sexual body parts were more effective than those about the names of sexual body parts in eliciting informative responses and increasing the specificity of body part identification [16].

The problems that alleged victims of child sexual abuse face may be due to their lack of knowledge and vocabulary required to describe bodily contact. Correct anatomical terms for genitalia may be learnt relatively late in development, often past pre-school age [17]. According to theories on autobiographical memory development, children's ability to narrate or describe a personally experienced event is heavily influenced by their language ability and culture [18-21]. For a child to narrate about a personal experience, s/he must be equipped with sufficient vocabulary to produce a coherent account of what, how, and why the event occurred. A limited vocabulary for colors and shapes, for example, would limit a child's ability to describe the features of a room where the event occurred. Further, the cultural context in which the child experiences an event may influence how the child talks about the experience, namely, culturally mediated autobiographical accounts. For one, the cultural values and practices surrounding a personal experience may influence how the event is recalled and narrated, specifically the amount and richness of the information reported. Further, socio-cultural factors can affect the child's motivation to narrate about a personally experienced event, especially when the event is related to a cultural taboo. Talking about sex, or sexual victimization, for instance, is often deemed taboo in many cultures. Children growing up in these cultures may be less willing to talk about a sexually abusive experience, and even if they were willing to disclose, they may lack the language or vocabulary to verbally describe sexual abuse.

Children develop scripts easily for many everyday events in their lives and may rely on them when recalling past experiences [22-24]. Specific episodes, such as sexual victimization, on the other hand, are more unique and distinct across individuals. The experience of a sexually abusive event is certainly not a typical routine event for children, and is most likely one that is unpleasant, embarrassing, frightening, and confusing. Furthermore, topics related to body parts and bodily contact are not usually taught in school, so semantic knowledge about the body and bodily contact is often acquired through caregiver teaching. However, such topics are rarely discussed in day-to-day parent-child interactions, especially in cultures where talking about physical intimacy or sex is still taboo. Likewise, bodily contact between caregivers and their children might also vary across families and cultures, with some caregiver-child dyads showing physical affection daily through kissing and hugging, while others may do so less often. When children have limited semantic knowledge associated with bodily contact and body parts, as well as little experience with bodily contact with their caregivers, they may encounter difficulties with verbally recalling a unique event like sexual abuse.

1.1. The Present Study

The present research aimed to provide a deeper understanding of how children learn and describe bodily contact in the home setting. We were interested in exploring whether children have difficulty describing sexually abusive acts due to the forensic nature of the interview context, or whether they typically lack the ability to clearly name and describe body parts and contact at home. The criminal justice system often places immense pressure on CSA victims to describe their ordeal in detail, and vague descriptions of genitalia and sexually abusive acts often lead to non-prosecution and non-conviction. When children fail to provide detailed descriptions in forensic interviews and in court, legal professionals may resort to using anatomical dolls to facilitate recall. However, if children cannot describe sexual abuse, merely using an aid, especially without prior training, may increase the risk of suggestion and contamination.

Investigating how children acquire knowledge regarding physical interaction and anatomy within the domestic environment provides critical insights into how they might articulate experiences of sexual abuse during forensic interviews. This study addresses three primary research objectives. First, it examines children's nomenclature and descriptions of genitalia and intimate bodily contact, alongside corresponding parental pedagogical practices. Second, it quantifies the frequency and nature of physical contact within the parent-child dyad. Finally, it examines whether children's anatomical knowledge and interpersonal experiences vary by age and gender. A new semi-structured questionnaire was designed to examine parent- and child-reported labels of body parts and bodily contact, as well as the frequency and nature of parent-child bodily contact. To the best of our knowledge, there are no Mandarin-language questionnaires that directly examine children's knowledge of body parts and bodily contact. It was therefore necessary to design a questionnaire specifically to study parent-child knowledge about bodily contact, which was culturally appropriate for use in Taiwan. Given the wide range of possible words for naming and describing body parts and bodily contact, and to allow for more detailed responses, the questionnaire was designed to be semi-structured, enabling parent and child respondents to provide written or verbal responses to open-ended questions.

2. MATERIALS AND METHODS

2.1. Participants

409 parent-child dyads (48% female child participants) were recruited for this cross-sectional study. We obtained 350 valid questionnaires from both children and their parents, 28 parent-only questionnaires, and 31 child-only questionnaires. Our inclusion criteria included an age limit of 5 to 10 years, and children had to be born and raised in Taiwan. As our study required a certain level of communicative ability, children with developmental disabilities were excluded. Our child participants included 161 preschool children (5-6 years), 131 lower elementary school-aged children (7-8 years), and 117 middle elementary school-aged children (9-10 years). Due to ethical constraints at the time, we were not allowed to obtain the children's date of birth. These age groups were chosen because a large proportion of real cases of child sexual abuse involve children in this age range. Parent-child dyads were recruited *via* public kindergartens and elementary schools across Taiwan. We recruited 131 (32%) participants from northern, 102 (25%) from the central, 102 (25%) from the southern, and 74 (18%) from the eastern regions of Taiwan. Kindergartens and elementary schools were contacted *via* telephone and briefed about the study, and an information pack including the parent and child consent forms was distributed to all students to bring home. Parents who consented to participate in the study then received a second pack from the school that included questionnaires for both the parent and the child. In cases where some participants included grandparents, a special note was made, and this data was checked before inclusion in the main analyses. The questionnaires also included questions on the demographic background of the participants, namely gender and age. Of the 378 parent-filled questionnaires, 82% were completed by mothers, and the remaining 13% were completed by fathers and grandparents. Ethical approval for this study was granted by the Ethical Review Board at the author's university.

2.2. Study Design and Procedure

A quantitative approach was adopted for this exploratory study. Parent-child dyads were given separate questionnaires to complete. A new semi-structured questionnaire was designed to examine the names and terms parents used to teach their children about body parts and bodily contact, as well as the amount and type of bodily contact they shared with their children. The parent-

version questionnaire included three sections: (a) naming of body parts and bodily contact; (b) frequency and nature of parent-child bodily contact; and (c) how parents teach labels and self-protection against inappropriate touching. The first section included two front- and back-view body diagrams (representing a boy and a girl, respectively) and numbered blank spaces for body part labels that parents teach their children, the functions of the genitalia, and the terms used to describe different kinds of bodily contact (kissing, hugging, touching). The second section included questions on how often the parent makes bodily contact (*e.g*. kissing, hugging, stroking the head, and so on) with his or her child (*e.g*. every day, several times a week, occasionally), in what contexts the bodily contact is made (*e.g*. watching TV, in the car, before bedtime, dropping off at school), and who initiates the contact (parent or child). Finally, we asked parents whether and how they taught their children about intimate body parts ("How do you find the opportunity to educate your child about intimate body parts?"), inappropriate touching, and self-protection ("How has your child learned about self-protection, such as inappropriate touching?"). All sections were semi-structured, allowing open-ended responses. Examples were provided to ensure that the respondents could complete the questionnaire on their own.

Another similar semi-structured questionnaire was also designed for the child participants to assess their knowledge of body part labels and of bodily contact, as well as the frequency and nature of bodily contact with their parents. The first section included two front- and back-view gender-neutral body diagrams (Note: when children were questioned about the opposite sex, they were asked "if this is a girl/boy, what would this part be called/used for?") and numbered blank spaces for body part labels, naming of the functions of the sexual body parts, and terms used to describe different kinds of bodily contact (kissing, hugging, touching). The second section included questions on how often the child makes bodily contact (*e.g*. kissing, hugging, stroking the head, and so on) with his or her parent (*e.g*. every day, several times a week, occasionally), in what contexts the bodily contact is made (*e.g*. watching TV, in the car, before bedtime, dropping off at school), and who initiates the contact (parent or child). Finally, we asked children whether and how their parents taught them about body parts and bodily contact ("Did anyone or who taught you about what you know about the body?"), inappropriate touching and self-protection. Due to their young age and potential difficulties filling out the questionnaire, research assistants administered it by telephoning each participating child individually. Each child participant had a copy of the questionnaire (including body diagrams) in front of them as the research assistant administered the questionnaire. All participating families were awarded a gift coupon as a token of appreciation for their participation.

2.3. Coding

Due to the scope of this study, we analyzed only data pertaining to intimate body parts and bodily contact. Coding of informal and idiosyncratic labels considered Taiwanese Mandarin factors (*e.g*., 'ji ji' is a common label for genitalia in Taiwan, but not necessarily in other Mandarin-speaking populations). Questionnaire responses were content analyzed and coded according to (a) labels used for sexual body parts, (b) functions of sexual body parts, (c) labels used to describe different kinds of bodily contact, (d) frequency, context, and initiator of bodily contact. Labels used for sexual body parts were categorized as formal (*e.g*., 'vagina'), informal (*e.g*., 'birdie'), function-related (*e.g*., 'pee-pee part'), intimate (*e.g*., 'important part'), idiosyncratic/other (*e.g*., 'bubu'), and 'don't know'. In addition, many children labelled genitalia as 'butt,' and so we created a separate category for this label. For anus or butt, a shape-related category was coded to include labels such as 'little bun' or 'peach'. Functions of sexual body parts were categorized as toilet-related (*e.g*., 'to pee' or 'to poo', reproductive (*e.g*., 'make babies'), other function (*e.g*., 'feed baby milk'), and don't know/incorrect function. Labels for different kinds of bodily contact were categorized as action labels (*e.g*., 'kiss') or reason-related labels (*e.g*., 'love', 'comfort'). The frequency of bodily contact was coded as daily, several times a week, or occasionally. Context was coded as at home or outside the home, and the type of daily event in which the bodily contact occurred (*e.g*., bedtime, dropping off at school). The contact initiator was coded as a parent or a child. Inter-rater reliability results are shown in Table **1**.

Table 1. Inter-rater reliability for parent and child questionnaires.

Questionnaire	% Agreement	Cronbach's α	Krippendorff's α
Parent	-	-	-
Overall	.94	.92	.88
Names of Body Part	.97	.96	.94
Functions of Body Part	.89	.82	.80
Teaching methods	.99	.99	.97
Bodily Contact	.88	.93	.84
Self-protection	.93	.92	.85
Child	-	-	-
Overall	.94	.91	.85
Names of Body Part	.95	.96	.92
Functions of Body Part	.91	.79	.75
Teaching methods	.86	.95	.85
Bodily Contact	.87	.95	.88

Note: Inter-rater reliability was calculated based on the 20% of the sample.

3. RESULTS

All the data were analyzed using descriptive statistics, chi-square tests, and regression analyses. Parent and child data were also examined based on child age group and gender. We studied labels and functions of five body parts: male front and back genitalia, female front and back genitalia, and female breast. Missing data for specific variables were excluded pairwise (*e.g*., missing parent data was excluded from parent variable analyses).

Table 2. Frequencies and chi-square tests for children's and parents' labels for sexual body parts.

Body Parts [a]	Frequency	Child		Parent		$\chi^2(df)$	*p*
		n	%	*n*	%		
Male front	≥ 2	5	1%	148	41%	191.94(2)	< .001
-	1	300	86%	209	58%	-	-
-	Don't know	45	13%	1	0%	-	-
Male back	≥2	2	1%	89	25%	103.78(2)	< .001
-	1	321	95%	267	75%	-	-
-	Don't know	16	5%	0	0%	-	-
Female front	≥2	4	1%	82	25%	153.01(2)	< .001
-	1	256	69%	241	72%	-	-
-	Don't know	110	31%	10	3%	-	-
Female back	≥2	0	0%	79	24%	105.70(2)	< .001
-	1	332	94%	256	76%	-	-
-	Don't know	20	6%	1	0%	-	-
Female breast	≥2	4	1%	118	35%	155.52(2)	< .001
-	1	308	88%	219	65%	-	-
-	Don't know	37	11%	1	0%	-	-

Note: Chi-square tests were conducted to compare the frequency of parent and child reports for two or more labels.
[a] Body parts refer to either the front/back genitalia or the female breast.

3.1. Labels Participants Gave to Sexual Body Parts

Frequency analyses indicated that most children (69% - 95%) used a single label for the five sexual body parts studied. However, many parents reported teaching their children two or more labels. Chi-square analyses revealed significant discrepancies between parent and child reports regarding the use of multiple labels. Table **2** displays the frequencies for each body part for both children and parents, and chi-square test results for discrepancies in labelling.

To examine the effects of gender and age group, we conducted separate binary logistic regressions for the five sexual body parts. Significant gender effects were found for male front genitalia (β = 1.05, *SE* = 0.33, OR = 2.85, *p* = .002), male back genitalia (β = 2.34, *SE* = 0.77, OR = 10.35, *p* = .002), female front genitalia (β = -1.41, *SE* = 0.26, OR = 0.24, *p* = .001), and female back genitalia (β = 1.11, *SE* = 0.53, OR = 0.74, *p* = .04).

Significantly more boys than girls could name the male front (boys = 92%, girls = 80%) and back (boys = 99%, girls = 90%) genitalia. Conversely, significantly more girls than boys could name the female front (boys = 58%, girls = 85%) and back (boys = 92%, girls = 97%) genitalia. Regarding age-group effects, a significant age-group effect was found for female front genitalia (β = -0.30, SE = 0.15, OR = 0.74, *p* < .05), with older children more likely to respond "I don't know." Generally, children used idiosyncratic labels (*i.e.*, pi-pi) for female front genitalia. Compared to parents, girls significantly labelled female front genitalia as idiosyncratic/other, $\chi^2(1) = 34.99$, *p* < .001. Regarding potential parental influence, 58% of children used parent-taught labels for female front genitalia, while 74% did so for male front genitalia.

3.2. Functions Participants Gave to Sexual Body Parts

Overall, most children could correctly identify the functions of each sexual body part. Specifically, 85% could report the non-reproductive function of male front genitalia, and 69% could do so for female front genitalia. However, very few children knew the reproductive functions, with only 2% for male genitalia and 5% for female genitalia.

Binary logistic regression analyses showed that boys were more likely to report the correct function of male back genitalia than girls (β = 1.01, *SE* = 0.40, OR = 2.74, *p* = .01). Conversely, girls were more likely to report the correct function of female front genitalia than boys (β = -1.58, *SE* = 0.34, OR = 0.21, *p* < .001). Age group was not significantly related to the correct reporting of functions for all sexual body parts. Table **3** shows the results of binary logistic regression analyses of child gender and age group on sexual body part functions.

Ordinal logistic regression analyses, using three categories (don't know/incorrect functions, only non-reproductive functions, reproductive functions), examined whether children's ability to describe reproductive functions was related to gender and age group. Significant gender effects were found: boys were more likely to correctly describe male reproductive functions (β = 0.76, *SE* = 0.32, OR = 2.13, *p* = .02), and girls were more likely to correctly describe female reproductive functions (β = -0.83, *SE* = 0.23, OR = 0.44, *p* < .001). Age group effects were observed only for male reproductive functions, with older children more likely to correctly describe these functions (β = 0.56, *SE* = 0.19, OR = 1.76, *p* = .004). This age-group trend was not observed in describing female reproductive functions (β = 0.22, *SE* = 0.14, OR = 1.25, *p* = .11).

Table 3. Zero-order correlations between educators and children's knowledge of sexual body parts.

-	Knowledge: general	Knowledge: male	Knowledge: female	Educator: father	Educator: mother	Educator: teacher
Knowledge: general [a]	-	.69**	.94**	.13	.09	.06
Knowledge: male	.70**	-	.39**	.10	.13	.10
Knowledge: female	.86**	.24**	-	.11	.04	.02
Educator: father	-.03	.04	-.06	-	.41**	.03
Educator: mother	.10	-.06	.18*	.25**	-	.07
Educator: teacher	-.02	.06	-.05	.12	.10	-

Note: Correlations based on girls' and boys' reports are shown below and above the main diagonal, respectively. Knowledge = sexual body knowledge that children had. Educators are people who teach children about sexual body knowledge.
[a] General: children's overall knowledge of both male and female sexual body parts.
* $p < .05$, ** $p < .01$.

3.3. Educators of Sexual Body Parts and Contexts of Teaching

Frequency analyses indicated that mothers taught labels of intimate body parts to most children (78%; 74% boys, 83% girls). Logistic regression analyses showed that significantly more girls were taught by their mothers than boys (β = -0.59, SE = 0.26, OR = 1.80, $p = .03$). Age-group effects were found for all sources of learning about intimate body parts. In other words, as children's age increased, there was a significant increase in learning from mothers (β = 0.58, $SE = 0.17$, OR = 1.79, $p < .001$), fathers (β = 0.42, $SE = 0.13$, OR = 1.50, $p = .001$), and school or teachers (β = 0.68, $SE = 0.14$, OR = 1.98, $p < .001$). Correspondingly, the proportion of children learning labels of intimate body parts *via* self-learning decreased significantly (β = -0.49, $SE = 0.25$, OR = 0.61, $p = .048$).

Regarding parent-child consistency in reporting whether children have been taught labels for sexual body parts, 20% of the parent-child dyads were inconsistent. Specifically, 17% of parents reported teaching their children, while the children reported not being taught. Binary logistic regression analyses indicated significant gender and age-group effects on this inconsistency. More boys (β = 0.77, $SE = 0.30$, OR = 0.46, $p = .01$) and younger children (β = -0.75, $SE = 0.19$, OR = 0.47, $p < .001$) reported differently from their parents.

Most teaching about labels of intimate body parts occurred during bathing or water activities (70%) and *via* media exposure (31%). Older children were more likely to learn labels of intimate body parts from parent(s) through media exposure, $\chi^2(2) = 8.00$, $p = .02$, and through chatting, $\chi^2(2) = 10.68$, $p < .01$. Furthermore, more girls learned these labels during bathing or water activities, $\chi^2(1) = 7.74$, $p = .005$.

3.4. Knowledge of Self-Protection about Touch

Approximately 35% of parents ($n = 142$) reported instructing their children not to let others touch their bodies if approached. Additionally, some parents reported teaching self-protection strategies, with 14% ($n = 59$) advising their children to "tell an adult about the incident" and 10% ($n = 41$) suggesting "leave the situation". When children were asked about self-protection, 7% ($n = 26$) reported being told not to let others touch their bodies, and none reported being taught to "tell an adult" or "leave the situation." Neither gender nor age group effects were found for self-protection knowledge. In other words, boys and girls, as well as children across age groups, did not differ in their reports about what to do when others touch their bodies.

3.5. Experiences of Intimate Bodily Contact

Most children reported kissing (82% boys, 87% girls) and hugging (94% boys, 97% girls) their parents usually. Generally, girls reported more at-home bodily contact (β = -1.37, $SE = 0.65$, OR = 0.25, $p = .04$) experiences than boys. Parents and children did not differ in their reports of the frequency of kissing and hugging, but they did differ in the locations, times, and initiators of intimate bodily contact. First, children reported more at-home intimate bodily contact than parents, $\chi^2(1) = 4.68$, $p = .03$, while parents reported more out-of-home intimate bodily contact than their children, $\chi^2(1) = 52.31$, $p < .001$. Second, parents also reported more bodily contact for comfort, $\chi2(1) = 37.93$, $p < .001$; praise, $\chi2(1) = 54.51$, $p < .001$; and affection, $\chi^2(1) = 7.12$, $p = .01$, compared to children. Third, multinomial logistic regression analyses indicated that older children were more likely to report mutual, rather than parent-initiated, kissing (β = 0.64, $SE = 0.20$, $p < .01$) and hugging (β = 0.80, $SE = 0.18$, $p < .001$).

3.6. Factors Related to Children's Knowledge of Sexual Body Parts

Pearson's correlation coefficients suggested that children with more bodily contact experiences had greater knowledge of both male and female sexual body parts ($r_{overall} = .17$, $r_{male} = .12$, $r_{female} = .12$). Initiator of bodily contact was not significantly correlated with children's knowledge of sexual body parts. Additionally, maternal instruction was positively correlated with children's proficiency in identifying sex-specific anatomy corresponding

to their own gender (r_{male} = .13, r_{female} = .18). Table **3** displays the zero-order correlations between educators and children's knowledge of sexual body parts.

4. DISCUSSION

4.1. Labels of Sexual Body Parts

Our findings revealed that most of the children in our study could label the sexual body parts of both boys and girls. Specifically, more than half of the children could use at least one label for any sexual body part. Children were generally more likely to know the labels of body parts of their own gender, except for the female breast. This suggests a general familiarity with their own gender anatomy. However, it is crucial for children to know the names of body parts for both genders, especially considering that child sexual abuse often involves understanding both their own body and others'.

Regarding age effects, older children surprisingly had less knowledge about female front genitalia, often responding with "I don't know" when asked. Burrows and colleagues found that children of elementary school age were more likely than children aged 4-7 years to use unclear terms for genitalia [3]. However, the kindergarten children in our study used more idiosyncratic or alternative labels of female front genitalia, while elementary school children were more likely to use formal names. Therefore, although younger children seemed more capable of labelling female front genitalia, the labels they used might be vague or not representative enough for investigative interviewers to accurately understand which body parts the children are referring to. Studies in the United States and Iran have also found that preschool-aged children used slang terms to label sexual body parts [25, 26].

Interestingly, there were discrepancies between parents' and children's responses. Parents were more likely to claim that they had taught their children at least two labels for each sexual body part. However, many children could not report that many labels when asked. This indicates that parents may have overestimated their children's knowledge or memory of sexual body parts. It is concerning because parents may believe they have adequately educated their children, but the children may not have fully understood or remembered the names. Therefore, it is important for parents to ensure their children understand, remember, and can use these labels to accurately refer to body parts.

4.2. Functions of Sexual Body Parts

Our study revealed that children generally demonstrated accurate knowledge of the functions of intimate body parts, with notable gender differences. Boys were more likely to correctly identify the functions of male back genitalia, while girls showed better understanding of female front genitalia functions. Surprisingly, older children did not show better knowledge of body functions. This result suggested that kindergarten children may possess knowledge levels similar to those of elementary school students.

Understanding concepts such as sexual penetration was identified as challenging for children [10], which could impact the outcome of investigative interviews of alleged child sexual abuse cases. This underscores the importance of assessing children's understanding of reproductive functions, especially considering the gender differences observed in our findings. Children were more likely to answer correctly regarding the reproductive functions of their own gender. Furthermore, older children exhibited greater knowledge of male reproductive functions over time. In contrast, there were no age differences in the understanding of female reproductive functions. This disparity may be attributed to social norms that more often link sex to male genitalia, rather than female genitalia [27]. Additionally, societal taboos and implicitness surrounding discussions of female genitalia may also contribute to less exposure and understanding of female genitalia among children [25, 28]. Addressing these disparities is crucial for improving comprehensive sex education and ensuring adequate understanding of reproductive functions from a young age.

4.3. Educators of Sexual Body Part

Parents were identified as the primary educators on sexual body parts for children in our study. Interestingly, there were instances in which parents believed they had taught their children about these body parts, yet the children did not recall receiving such instruction, especially younger boys. This parent-child discrepancy highlights the need for parents to ensure their children understand and remember these teachings.

Consistent with traditional caregiving roles [29], mothers were predominantly responsible for teaching about sexual body parts. In contrast, few fathers engaged in this education. It should be noted that mothers' teaching also varied across children's gender. That is, girls were more likely to learn about sexual body parts from their mothers than boys. Based on our finding that children tended to know better about sexual body parts of their gender, it is possible that mothers were more likely to help their daughters than their sons understand their own sexual body parts. Another explanation for this finding may be related to parent-child relationships. Considering that parents may spend more time with their same-gender children [30], parental influence may also be stronger for same-gender parent-child dyads, thus amplifying the effects of mothers' teaching on their daughters.

As children mature, they increasingly gain knowledge about the world, including the human body, from or through people outside the family. For instance, the school setting becomes more influential as children learn from and discuss their bodies with their teachers and peers. Our finding that almost half of the third- and fourth- grade children had learned about sexual body parts in school supports this explanation. On the one hand, this finding highlights the significance of schools in children's learning of body knowledge and the need for educators to help establish correct knowledge. On the other hand, however,

it is concerning that only half of the children cited their school as a source of their learning. Given schools' pivotal role in developing children's knowledge about sexual body parts and inappropriate touching, there should be an enhanced curriculum emphasis in this area, especially as children advance through grades and become more receptive to such knowledge.

4.4. Contexts Where Sexual Body Parts are Taught

We explored four contexts where parents teach their children about sexual body parts: media exposure, child inquiry, casual conversation, and during bathing or water activities. Most parents reported teaching about sexual body parts during bathing, particularly with daughters. This indicates that, for most families, bathing or water activities provide a crucial, private opportunity to discuss body parts and boundaries. Furthermore, as girls are traditionally considered more vulnerable to sexual abuse, parents might also be more likely to find it necessary to teach girls about sexual body parts during bathing.

In addition to bathing and water activities, media exposure and child inquiries were common contexts for teaching sexual body part knowledge. The older children in our study were more likely to learn from mass media. However, this could be problematic as mass media may present inaccurate or unhealthy values regarding body parts and bodily contact [31]. Waiting for children to encounter or ask about these topics can lead to misunderstandings before parents have a chance to provide accurate information. Consequently, it is recommended that parents proactively teach their children about intimate body parts, guiding them towards a correct and healthy understanding of these concepts.

4.5. Bodily Contact and Self-Protection of Touch

As bodily contact between caregivers and their children may affect whether children have enough semantic and conceptual knowledge to accurately describe "touch", we investigated the nature and experiences of parent-child bodily contact. Our findings demonstrated that most children reported kissing and hugging their parents, with girls experiencing more at-home bodily contact with parents than boys. This difference may stem from patriarchal social values in Taiwan that encourage males to be stoic and less expressive [32, 33], thus limiting boys' experiences of intimate bodily contact. This finding underscores the need to emphasize awareness and knowledge of bodily contact for boys, especially considering that cases of child sexual abuse involving boy victims account for 25.1% in Taiwan [34].

Our findings also indicated that older children were more likely to engage in mutual, rather than parent-initiated, kisses and hugs. This suggests that as children grow older, they may become more aware of the meanings behind bodily contact and are more willing to initiate intimate bodily contact. We could therefore expect that older children, with more bodily contact experiences and developed language skills, may possibly find it easier to recall and report unique events related to bodily contact, such as sexual abuse.

Only 7% of children reported being taught self-protection knowledge, primarily the concept of "not letting others touch my body". This level of knowledge did not vary by gender or age group, indicating that children across all genders or developmental stages have similar, limited awareness of self-protection. This is concerning, as children may lack the ability to recognize or resist inappropriate touch. We recommend that educators, such as schoolteachers, introduce self-protection concepts early, given the demonstrated effectiveness of self-protection education for children as young as three [17]. This education should include how to identify, report, and reject inappropriate touch. Moreover, self-protection programs that involve parents have been shown to be particularly effective [17]. We encourage parents to participate in these educational efforts to enhance children's understanding of body safety and personal boundaries.

4.6. Relations Between Bodily Contact and Children's Knowledge of Sexual Body Parts

To explore possible factors related to children's knowledge of sexual body parts, we examined the frequency and initiators of bodily contact and the sources of their learning. As expected, children with more bodily contact experiences knew more about sexual body parts, including those of the opposite gender. This finding highlights the importance of bodily contact experience in shaping children's understanding of body parts. First, parents who frequently express affection through kisses and/or hugs may be more open to discussing body parts. Likewise, children in such environments may be more willing to engage in these conversations. Second, regular bodily contact provides children with more opportunities to observe and inquire about their own bodies, enhancing their vocabulary and their ability to describe body-related events. As a result, bodily contact with parents is crucial for developing both the motivation and the semantic and conceptual knowledge to discuss sexual body parts. In the current study, the findings indicated that the initiators of bodily contact were not related to children's knowledge of sexual body parts. This result suggests that both parents and children play equally important roles in building this knowledge, regardless of who initiates the contact.

Our findings demonstrated that the more mothers, but not fathers, taught their children about sexual body parts, the better the children understood the body parts of their own gender. This result aligns with the notion that females are traditionally seen as primary caregivers [27] and are more involved in childcare than males in Taiwan [35]. The refore, mothers may be more influential on children's understanding of bodies. However, it should be noted that the children's knowledge about sexual body parts came disproportionately from their mothers in the current study, which may explain the stronger association between children's and mothers' reports compared to that with fathers. However, research increasingly shows that fathers also play a crucial role in parenting [36, 37]. Future studies should consider both mothers' and fathers'

teaching roles to better understand fathers' potential influence on children's knowledge of sexual body parts and inappropriate touching.

There is very little research on how children specifically describe body parts and bodily contact in the context of sexual abuse, especially in East Asia. Particularly, it is unclear whether children can describe sexual penetration in ways that investigators can understand and use for prosecution. While our study cannot address the latter issue due to the nature of our data, our findings show that even younger children can label sexual body parts and state their functions. Future research should also investigate whether children in East Asia exhibit an underextended understanding of bodily contact-related terms such as 'touch', as found in Western research [12].

5. STUDY LIMITATIONS

The main limitation of our study is that the data is based on self-reports, and so some children may not have accurately recalled bodily contact experiences or who taught them body knowledge. It is also unclear whether our findings apply to sexually abused children, considering the possibility that sexually abused children may hear the body part and body contact terms from the perpetrator. However, we argue that our findings can shed light on what we should expect when questioning children about possible sexual abuse.

CONCLUSION

Overall, the findings of this study highlight the importance of clear and consistent communication between parents and children regarding the names and functions of intimate body parts, as well as appropriate and inappropriate bodily contact. Such knowledge is critical not only for children's personal education but also for their safety and well-being [38]. These findings further underscore the value of structured school-based body safety programs and complementary parental education initiatives. Evidence suggests that school-based prevention programs can enhance children's understanding of body safety, improve their ability to recognize inappropriate behaviors, and increase their willingness to disclose potential abuse, while parental education programs help caregivers reinforce protective messages and support children's help-seeking behaviors [39, 40].

AUTHORS' CONTRIBUTIONS

It is hereby acknowledged that all authors have accepted responsibility for the manuscript's content and consented to its submission. They have meticulously reviewed all results and unanimously approved the final version of the manuscript.

ETHICS APPROVAL AND CONSENT TO PARTICIPATE

Ethical approval was given by the Research Ethics Committee, reference number 201505HS089.

HUMAN AND ANIMAL RIGHTS

All human research procedures followed were in accordance with the ethical standards of the committee responsible for human experimentation (institutional and national), and with the Helsinki Declaration of 1975, as revised in 2013.

CONSENT FOR PUBLICATION

Informed consent was obtained from the child participants' parents or legal guardians.

STANDARDS OF REPORTING

STROBE guidelines were followed.

AVAILABILITY OF DATA AND MATERIALS

The data and supporting information are available in the article.

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CONFLICT OF INTEREST

The authors declare no conflict of interest, financial or otherwise.

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