



Developing a New Co-parenting Awareness Scale for Measuring Effective Co-parenting Awareness Strategies: Relationship with Attribute/Parental Awareness Development

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ABSTRACT

Objectives: Our study aims to develop the first-ever married couple co-parenting awareness scale by interviewing Japanese parents and examining their narratives regarding cooperation in parenting. The attributes and parental awareness development will be analyzed to clarify the characteristics of the parenting efforts.

Materials and methods: A 44-item co-parenting scale was consequently developed. A questionnaire survey of 668 couples using the co-parenting scale, the marriage “reality” scale, and the parental consciousness development scale was conducted. Age, family structure, and employment status were enquired, and responses were statistically analyzed.

Results: Concurrent validity showed a significant correlation between the co-parenting scale and the marriage “reality” scale. Internal consistency was confirmed by inter-factor correlation. Husbands had a significantly higher level of “compassion and gratitude toward the other spouse” than wives ($p < 0.05$). Those with two children had a significantly higher level of “feeling of wanting to help each other and related behavior” than those with three children. Moreover, “communication between husband and wife” was significantly higher in unemployed participants. No attribute was related to “things that hinder cooperation between husband and wife.” In terms of parental consciousness development, “compassion and gratitude toward the other spouse,” “feeling of wanting to help each other and related behavior,” and “communication between husband and wife” in wives of high-level groups were significant. With regards to “things that hinder cooperation between husband and wife,” only “consciousness of the relationship” and “a sense of resource constraint” in wives were significant factors. The developed scale is expected to be incorporated as a co-parenting scale.

Conclusion: The development of this new scale provides invaluable information that contributes to the social sciences, family sciences, and child development. The scale has beneficial implications for therapists, social workers, and child life specialists who wish to help married parents adopt effective co-parenting strategies.

Keywords: Children; Couple; Development; Parental roles; Reliability

INTRODUCTION

The efficacy of married couples working together to raise children has been clarified in prior studies [1-3]. A co-parenting relationship is where parents share childrearing responsibilities equally and support each other by coordinating their parental roles. It is expected that they foster amicable relationships resulting in a profoundly positive effect on their children’s development. Moreover, co-parenting can contribute to the health improvement of the entire family in various manners. Examples include increasing the percentage of

men in childcare, which not only creates a better gender-equal environment, but also secures the nation’s workforce by providing women greater opportunities to continue employment. It reduces the percentage of parents who experience difficulty in raising their children and even instances of child neglect or abuse [4].

The Marital Adjustment Scale developed by Mikuma et al. (1999) is the Japanese version of the Marital Adjustment Test, which overviews the development of scales related to parenting by married couple [5]. This scale was introduced 22 years ago and includes 15

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weighted items as well as a special score ranging from 2 to 158 points, with higher scores indicating better marital relations.

The Married Couple Parenting Adjustment Scale (Kato et al., 2014), used in a related study (Author, 2020a) conducted by the current author is a modified Japanese version of the Parental Regulation Inventory developed by Van Egeren (2004) [3,6,7]. This scale measures mothers' adjustment to fathers' involvement in childrearing. It consists of a nine-item scale identifying "facilitating factors" that indicate mothers' respect, support, and encouragement as well as a seven-item scale identifying "criticizing factors" that indicate mothers' refusal, evasion, and criticism of fathers' involvement with the children. The average of these items is used as the subscale score, and the higher the score, the higher the frequency of facilitative and critical behaviors. On this scale, mothers were asked to describe their own facilitating and criticizing behaviors, while fathers' perceptions were asked regarding the mothers' behaviors. The idea underlying the development of this scale was the assumption that parenting is primarily the mothers' responsibility, and the issue arose from the father's own perceived facilitative and critical behaviors toward his spouse. Since co-parenting is defined as "the cooperation between mothers and fathers based on the marital relationship to support each other's childrearing activities and to provide a stable environment for the children," childrearing is not solely the mothers' responsibility but is a collaborative effort with fathers. Therefore, this scale serves a significant purpose.

The Japanese version of the Co-parenting Relationship Scale (CRS-J) (Takeishi et al., 2017) is based on Feinberg's original version of the CRS consisting of 35 items, including two items from each of the seven subscales, which constitute a 14-item shortened version of the scale [8]. The scale determines co-parenting by considering co-parenting agreement, spousal support/inhibition, and the division of labor in housework and childrearing, and family bonds. To examine the reliability and validity, parents of one-year-old children were included in the study. It was found that men approve their partner's work despite feeling inhibited. Additionally, the same researchers developed a co-parenting program in the United States (US) based on empirical evidence that explores problem-solving in childrearing, by supporting collaborative parenting, sharing childrearing responsibilities equally, and coordinating and supporting each other's parental roles. Currently, we are in the process of evaluating the applicability of the U.S. based Family Foundation Program that provides evidence to promote co-parenting in Japanese families-to-be according to the Japanese socio-cultural context. This subject is currently being studied in the research of Nakamura et al., which is being funded by Grant-in-Aid for Scientific Research B from 2020 to 2024 [9].

Much progress has been made in the development of Co-parenting awareness Scales. It can be seen that Japanese versions of scales developed overseas have been created. However, no scale has been developed based on data from the Japanese people. Thus, our study attempts to develop the first-ever married couple co-parenting awareness scale by interviewing Japanese parents, and examining their narratives regarding cooperation in parenting. The attributes and parental awareness development will be analyzed to clarify the characteristics of the parenting efforts.

MATERIALS AND METHODS

Primary survey (Formulation of questionnaire items)

Survey method: The survey period ran from May to July 2019. A

questionnaire survey was conducted in July 2018 among parents with children aged three to four years in Prefecture A. Participants were recruited through notices posted in nursery schools, kindergartens, and childcare support centers. Those interested in participating provided their contact information (postal addresses) when responding to the survey. At a later date, materials stating the purpose and methods of the survey were mailed to the addresses provided, and the prospective participants were asked to indicate their willingness to participate in face-to-face interviews. Participants were then contacted *via* phone or through social media to arrange the date, time, and location of the visit, and semi-structured interviews with both parents were conducted separately through home visits. Tape recordings were obtained with the permission of the participants.

Survey participants: Eleven people (seven mothers and four fathers) rearing children between the ages of three and four, living in Prefecture A, were included in the analysis. In the same survey, seven couples (14 people) were analyzed separately [10].

Survey content: The topics addressed in the interviews included the following: awareness the couple has toward their own relationship, feelings and changes toward the partner, and relationship satisfaction. Regarding thoughts toward parenting, the questions prompted the following: thoughts underlying the idea of cooperation in childrearing, the actual state of cooperation and satisfaction, facilitation of beneficial cooperation through words and actions and their underpinnings, important and hindering elements of cooperation in childrearing, and changes in cooperation due to raising a greater number of children.

Analytical methods: The semi-structured interviews were transcribed. The transcriptions were examined and interpreted. The narratives concerning marital awareness and the couples' thoughts on parenting were coded into categories. The codes for fathers and mothers were listed and the duplicates were combined into one. The 11 participants' average age was 40.5 years and they had an average of 2.6 children. The average ages of their children were (in years): the first child (M=9), the second child (M=5.5), the third child (M=4.5), and the fourth child (M=3). All the families had a nuclear structure; with four having parents employed full-time, four with part-time workers, and three with full-time, stay-at-home housewives. Twenty-one codes for fathers and 25 codes for mothers were identified. The codes were further refined into universal expressions, and the overlapping contents were combined into one. The final result was a 44-item scale. This process of selecting the items was carried out with one person who had experience in childrearing and was familiar with the research.

Secondary survey

Survey period: The survey was conducted from September 2020 to January 2021.

Survey targets and methods: The survey targeted couples raising children aged two to five years from Prefecture A. It was conducted at four kindergartens and one childcare support center. Written informed consent was obtained from each study participant. The survey forms were collected at the preschools. The participants mailed their forms in the provided enclosed envelopes to the childcare support center.

Survey content: In addition to the 44-item married couple co-parenting awareness scale (where the spouses answer the questions

by replacing “wife” and “husband” with “I,” respectively), respondents were prompted to complete the married couple co-parenting adjustment scale, the Parental Awareness Development Scale, the Marriage “Reality” Scale, and provide information regarding their age, number of children, age of the children, family structure, and employment status. The following are the scales used in the survey: a) Married couple co-parenting adjustment scale: We utilized Kato et al.’s modified version of the Parental Regulation Inventory (PRI) based on Van Egeren’s scale in our study [6,11]. The PRI was developed to measure the maternal adjustments to paternal involvement in parenting. It consists of a nine-item “promoting factors” scale (mother’s respect, support, and encouragement) as well as a seven-item “criticizing factors” scale (mother’s refusal, evasion, and criticism) toward the father’s involvement with the child. The mean value of the items comprising these factors was used as the subscale score; the higher the score, the higher the frequency of promoting and criticizing behaviors. In this scale, mothers were asked to answer questions regarding their promotional and critical behaviors. There was a significant correlation in the concurrent validity of this scale. b) Marriage “reality” scale: The marriage “reality” scale, which consists of three subscales, was used [12]. Twelve items comprise the following three subscales: “compatibility,” which indicates that the spouses love and respect each other; “understanding and support for the husband,” which indicates that the wife understands, respects, and supports the husband’s individual way of being and living; and “understanding and support for the wife,” which indicates that the husband understands and respects the wife’s individual way of being and living. The questionnaire encouraged couples to describe their perceptions of the “reality” of their marriage and examine whether these perceptions correspond to those of their husbands or wives *via* three-dimensional scores. A significant correlation is expected in the concurrent validity of this scale. c) Parental awareness development scale: As explained by Kato et al., this questionnaire consists of three sub-items: relationship awareness, personality awareness, and a sense of resource constraints [13]. They are based on the 29 items formulated through the questions posed to parents during the childrearing period, where they describe their experiences of parenthood and the loneliness and regret they feel as their children grow up. The father’s relationship awareness refers to the deepening of affection directed toward his family while the mother’s relationship extends to the generational inheritance of childrearing, including the family she grew up in, and the outlook toward children in general. In addition, both the parents recognize a sense of resource constraint. It is expected that parenting remains unconfined to solely a mother-child, or a father-child relationship, which leads to the development of the individual, couple, and the family through marital mutuality. In this scale, it is predicted that couples with preferable co-parenting strategies will have significantly better relationships and personality awareness in a stable environment.

Analytical methods

A factor analysis using the principal factor method was conducted to develop the co-parenting awareness scale. In addition, the scale’s correlations with the married couple co-parenting adjustment scale and the marriage “reality” scale were analyzed to confirm its concurrent validity and reliability. Furthermore, the characteristics of couple parenting were analyzed that were concerned with

parental awareness development and parenting attributes.

Ethical considerations

The letter, which requested participation and was issued during the primary and secondary surveys, explained that cooperation was voluntary, and data collected would be destroyed post the survey and completion of analysis. Ethical review was conducted by the Ethics Committee of University (with which the researcher is affiliated) in 2018, and additional approval was obtained in 2021 for ethical considerations in the secondary survey post the primary survey.

RESULTS

Attributes of survey participants

For the secondary survey, a total of 1400 questionnaires (700 for each gender) were distributed, of which 388(55.4%) were collected from wives, and 299(32.7%) from husbands. A total of 668(47.7%) respondents comprising of 291(41.6%) husbands and 377(53.9%) wives were selected for the analysis. The attributes of the respondents are listed in Table 1. The mean age of the wives was 37.81 years (SD= ± 4.63), with 112(29.7%) women engaged in part-time work. The common number of children was two (57.6%) and there were 339 (89.9%) nuclear families. Four (1.1%) husbands lived away from their families because of their jobs.

Meanwhile, the mean age of the husbands was 39.6 years (SD= ± 5.42). With respect to their employment status, 271 (93.1%) were full-time workers (including self-employment). The most common number of children was two (58.1%). Their family structure was the same as that of the wives for 259(89.9%).

Structure of co-parenting

The correlation matrix for the 44 items of the married couple co-parenting awareness scale confirmed that there were no scale items with correlation coefficients greater than 0.9. The ± 1 SD was calculated from the mean and standard deviation to check the ceiling and floor effects. Based on the calculated values, 11 items had ceiling or floor effects. A bias was identified in the distribution of scores, which was considered to be the floor effect in one item: “22. Husbands are not interested in children and do not have a sense of awareness and responsibility as a parent.” The following four items showed a skewed distribution of scores, perhaps due to the ceiling effect: “7. Wives want their husbands to take an interest in their children and to have various conversations with them,” “11. Wives trust their husbands,” “37. Both husbands and wives need to respect and understand each other,” and “42. Husbands are grateful to their wives for all they do.” Therefore, the five items were excluded from the analysis, while factor analysis using the principal factor method was conducted on the remaining 39 items. The change in the eigenvalues was 11.92 2.05 1.89 1.63 1.183..., which suggests a four-factor structure. Factor analysis was conducted using the principal factor method, promax rotation, including the exclusion of items with low commonality values and insufficient factor loadings. The final factor patterns and inter-factor correlations after promax rotation are shown in Table 2. The α coefficients and scale items were examined after removing the final factor pattern.

Table 1: Attributes of secondary survey respondents.

		Wife N=377		Husband N=291	
		Mean	SD	Mean	SD
Age		37.81	4.63	39.6	5.42
		1.97	0.72	1.96	0.72
		N	%	N	%
No. of children	1 Person	91	24.1	72	24.7
	2 Persons	217	57.6	169	58.1
	3 Persons	57	15.1	41	14.1
	4 Persons	12	3.2	9	3.1
Mode of employment	Full-time housewife (including house husband)	209	55.4	1	0.3
	Full-time worker (including self-employed)	30	8.0	271	93.1
	Part-time worker	112	29.7	-	-
	Other	11	2.9	19	6.5
	On childcare leave	15	4.0	-	-

Note: (-) Not applicable.

Table 2: Analysis results of the married couple co-parenting awareness scale (Factor patterns after promax rotation).

Scale items	Factor			
	I	II	III	IV
31. Husband wants to make his wife comfortable	0.76	0.21	-0.11	-0.15
41. Husband cares about his wife	0.74	0.12	-0.05	0.05
35. Husbands value the time they spend with their wives	0.71	-0.08	0.02	0.14
38. Husbands try to know what their wives want	0.71	0.05	-0.01	0.05
36. Husbands are considerate of their wives	0.68	0.07	0.11	0.06
44. Husbands try to listen to their wives	0.6	-0.01	0.08	0.16
15. Husbands express their appreciation to their wives in words and praise them	0.57	-0.02	0.24	0.02
2. I want to take care of my wife more than my children	0.55	-0.12	0.07	-0.10
1. Both wife and husband say "thank you" and do not forget to express their gratitude	0.52	-0.09	0.30	-0.06
21. Husband understands the burdens undertaken by his wife	0.48	0.18	0.07	0.05
16. Husbands guide their wives so that they will not regret their actions	0.44	0.08	0.30	0.02
13. Husbands naturally help with housework and childcare	-0.16	0.76	0.27	0.04
33. Husbands do what they can about cooking	-0.07	0.61	0.00	-0.02
14. Husband takes care not to frustrate his wife and to make time for her to be alone	0.18	0.52	0.22	-0.01
30. Husband is trying hard not to leave it all to his wife	0.32	0.47	-0.08	-0.12
40. My husband wants to do what he can	0.39	0.45	-0.15	-0.06
34. My husband is motivated and always thinking about better ways	0.23	0.45	0.01	0.01
17. Husbands cooperate with anything without commenting or complaining	0.06	0.44	0.3	-0.04
27. I don't think "parenting is a woman's job"	0.12	0.37	-0.18	0.34
10. We try to pay attention to each other and discuss things as they happen	0.33	-0.1	0.52	-0.02
3. I express my feelings and opinions in words to my partner	0.17	0.00	0.51	0.00
4. Wives can leave anything to their husbands	-0.1	0.40	0.48	0.00
9. Wives try to listen to their husbands' opinions even when they are in charge	0.14	-0.04	0.46	-0.07
6. Husbands address their children calmly	-0.07	0.21	0.4	-0.03
39. Husband has less time to interact with wife	-0.02	0.13	-0.12	-0.59
26. Husband is mostly left to his wife	0.14	-0.47	-0.04	-0.50
43. Husbands prioritize work	0.09	-0.23	0.14	-0.46
25. Husband does everything, but all responsibility is left to his wife	-0.22	0.02	0.11	-0.45
19. Husbands have a strong sense of "a man works, a woman takes care of the home"	0.00	-0.33	0.11	-0.44
18. I want us to talk and share, but the husband doesn't have the same idea.	-0.39	0.02	0.02	-0.44
29. I think I should talk more with my wife	0.29	0.20	-0.33	-0.43
24. There seems to be a gap between the husband's and wife's values	-0.21	0.06	-0.15	-0.37
Factor name	Inter-factor correlations			
	I	II	III	IV
I Compassion and gratitude toward the other spouse	-	0.64	0.48	0.50
II Feeling of wanting to help each other and related behaviour		-	0.37	0.50
III Communication between husband and wife			-	0.53
IV Things that hinder cooperation between husband and wife				-

As a result of the analysis, the first factor consisted of 10 items, such as “Husbands want to make their wives comfortable” and “Husbands express their gratitude to their wives in words and praise them.” The loadings were high for the items about the importance of the husbands’ place in their wives’ lives with respect to childcare. Therefore, this factor was named “compassion and gratitude toward the other spouse.”

The second factor consisted of seven items, with high loadings for content items such as “My husband naturally helps with housework and childcare” and “My husband wants to do what he can.” Therefore, this factor was named “feeling of wanting to help each other and related behavior”.

The third factor consisted of five items, and the high loadings were observed for “We pay attention to each other and try to discuss things as they happen,” and “I express my feelings and opinions to my partner in words,” which pertain to a relationship with open communication. Hence, this factor was referred to as “communication between husband and wife.”

The fourth factor consisted of seven items with negative loadings, such as “Husbands have little time to interact with their wives” and “Husbands leave most of the work to their wives” showing high loadings. This factor was named “things that hinder cooperation between husband and wife.”

Reliability and validity of the married couple parenting scale

The seven items comprising the “Things that hinder cooperation between husband and wife” are considered to be “reversed items” because they show negative loadings and are processed in a reverse fashion. The mean of the items corresponding to the four subscales of the married couple co-parenting awareness scale was calculated and the following subscales were scored as follows: “compassion and gratitude toward the other spouse” subscale score ($M=3.70$, $SD=0.82$), “wanting to help each other and related behavior” subscale score ($M=3.37$, $SD=0.84$), “communication between husband and wife” subscale score ($M=3.57$, $SD=0.76$), and “things that hinder cooperation between husband and wife” subscale score ($M=3.29$, $SD=0.79$).

To examine internal consistency, the α coefficients of each subscale were calculated, and the Cronbach’s α and scale items were examined when items were deleted. Results were obtained as follows: $\alpha=0.92$ for “compassion and gratitude toward the other spouse,” $\alpha=0.82$ for “wanting to help each other and related behavior,” $\alpha=0.71$ for “communication between husband and wife,” and $\alpha=0.77$ for “things that hinder cooperation between husband and wife.” The inter-subscale correlations of the couple’s parenting are shown in Table 3, the four subscales showing significant positive correlations with one another observed in Table 3.

Furthermore, correlation analysis with the married couple co-parenting adjustment scale and the marriage “reality” scale was performed to confirm concurrent validity. The results indicated that critical behaviors exhibited by the married couple parenting adjustment scale had significant weak negative correlations with “compassion and gratitude toward the other spouse,” “wanting to help each other and related behavior,” and “communication between husband and wife,” as well as a significant positive and slightly weak correlation with the other items. “Things that hinder cooperation between husband and wife” had a significant positive

weak correlation with critical behavior, which ran contrary to all the three items and exhibited slightly to significantly negative weak correlations for the other items shown in Table 4.

Analysis of the relationship between the married couple parenting scale and attributes/parental awareness development

In order to analyze the relationships between the married couple co-parenting awareness scale and parenting attributes, the relationship quality between the husband and wife, job status, number of children, and the age of the parents were analyzed. A significant difference was found between husbands and wives in “compassion and gratitude toward the other spouse,” it being significantly higher among husbands than wives ($p<0.05$). With “wanting to help each other and related behavior,” there was a significant difference ($p<0.05$) depending on the number of children. Multiple comparisons revealed that “wanting to help each other and related behavior” was significantly higher for couples raising two children than for those raising three ($p<0.05$). “Communication between husband and wife” was significantly higher among those who did not work. There was no relationship between parental attributes and “things that hinder cooperation between husband and wife” shown in Table 5.

Next, the results were analyzed in relation to parental awareness development observed in Table 6. The husband and wives “compassion and gratitude toward the other spouse,” “wanting to help each other and related behavior,” and “communication between husband and wife” were significant ($p<0.05$) in the high-score group for all items except “sense of resource constraints” for husbands. Regarding “things that hinder cooperation between husband and wife,” only the wife’s “relationship awareness” and “sense of resource constraints” were significant ($p<0.05$).

DISCUSSION

Structure of parenting by married couples

The component structure of parenting among heterosexual, married couples includes “compassion and gratitude toward the other spouse,” “wanting to help each other and related behavior,” “communication between husband and wife,” and “things that hinder co-parenting.” Compared to the previous three items, “things that hinder couple parenting” had a negative effect on co-parenting efforts. “Things that hinder co-parenting” are similar to critical behavior in the married couple co-parenting adjustment scale (Kato et al., 2014), and to “inhibition” and “fighting in front of children” in CRS-J Scale (Takeishi et al., 2017). This confirms that inhibiting factors are essential for understanding marital cooperation [6,8].

Positive factors included husbands’ consideration for their wives and mutual appreciation, husbands’ thoughts about marital cooperation, and cooperation between the couple as well as discussion, active listening, and communication of opinions with each other. In terms of differences and characteristics of criticism toward each other’s parenting, wives perceived their husbands’ criticism as either positive or negative, while husbands perceived their wives’ criticism as positive, negative, or irrelevant. Regarding the underlying causes of these criticisms, the wives had unique upbringing histories, views about parental roles, and marital

Table 3: Correlations between subscales of the married couple co-parenting awareness scale.

	Compassion and gratitude toward the other spouse	Feeling of wanting to help each other and related behaviour	Communication between husband and wife	Things that hinder cooperation between husband and wife
Compassion and gratitude toward the other spouse	-	.65**	.57**	.58**
Feeling of wanting to help each other and related behaviour		-	.52**	.56**
Communication between husband and wife			-	.49**
Things that hinder cooperation between husband and wife				-

Note: P<.01

Table 4: Concurrent validity of the married couple co-parenting awareness scale.

Scale name+A2:H7		Married couple co-parenting adjustment scale			Marriage "reality" scale		
Scale name	Subscale items	Promotion	Criticism	Compatibility and affection	Understanding and support for husband	Understanding and support for wife	
Married couple parenting scale	Compassion and gratitude toward the other spouse	.49**	-.24**	.69**	.44**	.61**	
	Feeling of wanting to help each other and related behaviour	.43**	-.11**	.46**	.35**	.53**	
	Communication between husband and wife	.56**	-.20**	.51**	.40**	.48**	
	Things that hinder cooperation between husband and wife	-.41**	.33**	-.47**	-.26**	-.46**	

Note: P<.01

Table 5: Comparison of attributes and marital couple co-parenting subscales.

Attributes	Group	Compassion and gratitude toward the other spouse				Wanting to help each other and related behaviour				Communication between husband and wife				Things that hinder cooperation between husband and wife				Multiple comparison
		Mean	SD	Median	P	Mean	SD	Median	P	Mean	SD	Median	P	Mean	SD	Median	P	
Married couple	Wife	3.54	0.94	3.70	.00*	3.32	0.96	3.43	0.48	3.58	0.77	3.60	0.60	2.71	0.87	2.57	0.37	
	Husband	3.92	0.57	3.90		3.44	0.65	3.57		3.56	0.73	3.60	2.71	0.67	2.71			
Job	Yes	7.75	0.75	3.90	0.07	3.36	0.77	3.43	0.09	3.54	0.73	3.60	.021*	2.73	0.74	2.71	0.23	
	No	3.60	0.93	3.80		3.38	0.97	3.59		3.64	0.80	3.80		2.66	0.88	2.57		
No. of children	1	3.38	0.81	3.90	0.24	3.41	0.85	3.59	.02*	3.63	0.75	3.80	0.15	2.69	0.77	2.71	0.19	2 children>3 children's
	2	3.92	0.8	3.85		3.42	0.82	3.59		3.58	0.76	3.60		2.66	0.79	2.71		
	3	3.58	0.87	3.80		3.15	0.9	3.29		3.49	0.73	3.40		2.89	0.8	2.86		
	4	3.43	0.97	3.70		3.24	0.86	3.14		3.27	0.83	3.40		2.84	0.91	2.86		
Age group	20s	3.81	0.74	3.80	0.75	3.27	0.94	3.43	0.61	3.61	0.81	3.80	0.76	2.61	0.79	2.43	0.86	
	30s	3.67	0.84	3.90		3.39	0.87	3.57		3.56	0.78	3.60		2.72	0.82	2.71		
	40s	3.93	0.8	3.80		3.36	0.79	3.43		3.58	0.70	3.60		2.70	0.76	2.71		
	50s and older	3.84	0.87	4.00		3.14	0.84	3.43		3.68	1.01	4.00		2.57	0.74	2.71		

Note: Mann-Whitney U test *p<.05; "Kruskal-Wallis H test" *p<.05; Multiple comparison: Bonferroni's multiple comparison test *p<.05.

Table 6: Comparison of the Relationship between the married couple co-parenting awareness scale and the parental awareness development scale.

	Wife												Husband											
	Relationship awareness				Personality awareness				Sense of resource constraints				Relationship awareness				Personality awareness				Sense of resource constraints			
	Median	Mean	SD	p	Median	Mean	SD	p	Median	Mean	SD	p	Median	Mean	SD	p	Median	Mean	SD	p	Median	Mean	SD	p
Compassion and gratitude toward the other spouse																								
Low group	64	63.68	6.71	.00*	37	36.84	6.66	.00*	21	20.31	3.456	.00*	60	58.54	8.32	.00*	32	32.6	5.74	.00*	19	18.14	4.38	.31 ns
High group	69	67.62	6.36		39	39.36	6.25		19	18.71	4.099		65	63.83	8.15		37	37.05	6.67		18	17.6	4.19	
Wanting to help each other and related behaviour																								
Low group	65	64.3	6.89	.00*	38	37.24	6.89	.04*	21	20.34	3.348	.00*	61	59.94	8.69	.00*	33	33.2	6.59	.00*	17	17.22	4.32	.05 ns
High group	68	66.65	6.6		39	38.74	6.24		19	18.86	4.128		64	63.7	8.12		37	37.38	6.23		19	18.19	4.17	
Communication between husband and wife																								
Low group	63.5	63.18	7.16	.00*	36	36.15	6.65	.00*	21	20.3	3.588	.00*	61	60.25	8.4	.00*	33	33.87	6.41	.00*	19	18.38	3.83	.07 ns
High group	68	67.2	6.09		39	39.34	6.22		19	19.02	3.958		65	63.57	8.42		37	36.98	6.63		18	17.29	4.52	
Things that hinder cooperation between husband and wife																								
Low group	68	66.78	6.62	.00*	39	38.31	6.56	.42 ns	19	18.68	4.116	.00*	64	62.89	8.08	.21 ns	36	36.25	6.51	.07 ns	18	17.2	4.22	.06 ns
High group	65	64.35	6.83		38	37.79	6.6		21	20.41	3.367		63	61.51	8.87		35	35.11	6.82		18	18.2	4.24	

Note: *p<.05.

distortions. Meanwhile, the husbands' criticisms arose from the roles and relationships in their homes. It has been suggested that these couples communicate their thoughts with each other before they further drift apart due to the dissonance in their perception and acceptance, review their views on parental roles, respect each other's views on childrearing, and communicate their dissatisfied thoughts openly with each other (Author, 2020b), leading to the realization of positive factors [14].

Regarding the couple's awareness of their relationship and their feelings about co-parenting, they were satisfied in terms of mutual trust, appreciation, and support. This was maintained and adjusted with respect to the husband's support toward his wife, as well as in his desire to be supported by his wife for the sake of their children. Based on such interpersonal equations, feelings toward beneficial co-parenting were maintained [14]. This scale shows that the husbands' thoughts, behaviors, and communication regarding co-parenting are supportive in nature. Inhibiting factors include insufficient time spent with their wife, leaving all the housework and childrearing responsibilities to her, prioritizing work, imposing responsibilities on her, having firm traditional beliefs with regards to gender roles, not being consulted or the wife not sharing her ideas, being aware of the need for discussion, and being aware of the differences in values between the couple. If these problems persist between a couple, co-parenting will not succeed. The support plan reveals the importance of interventions, especially for the husband.

The process through which the mother's adjustment behavior affects her work-childcare balance and the interaction between the couple, including the father's changes and reactions, shows either a positive or negative impact [15]. Therefore, positive marital interactions are attributed to the positive effects of the husband's changes and reactions. Such positive interactions lead to a deeper understanding of each other's thoughts and desires during childrearing years. It also leads to a sense of responsibility and fulfillment at work, a developmental task, while enhancing each other's "growth as parents," such as deepening the bond between husband and wife and encouraging the restructuring of the family [16]. Therefore, this scale is meaningful since couples can reflect on each other's experiences by answering this questionnaire.

Characteristics of parenting by married couples

The analysis of attributes and parental awareness development revealed characteristics of co-parenting. "Compassion and gratitude toward the other spouse" was significantly higher for husbands than for wives, and "wanting to help each other and related behavior" showed significant differences depending on the number of children. Multiple comparisons revealed that respondents with two children scored significantly higher than those with three children. In addition, "communication between husband and wife" was significantly higher for those unemployed. As seen from the overview of the scale items, husbands' compassion for their partner was characterized as higher than that of their wives. In the case of three children, the data rendered different descriptions from the participants. This may be because parents raising three children have greater experience and possess different perspectives on parenting compared to families with two or fewer children. Results also indicated that married couples faced difficulties in communicating when both the spouses worked.

Additionally, in the analysis of parental awareness development, husbands' and wives' "compassion and gratitude toward the other

spouse," "wanting to help each other and related behavior," and "communication between husband and wife" were significant in the high-scoring group for all items except for the husband's "sense of resource constraints." In the category of "things that hinder cooperation between husband and wife," only the wife's "relationship awareness" and "sense of resource constraints" were significant. Husbands were found to not feel any constraints or limitations associated with childrearing, such as having limited free time and a smaller scope for activities. Both the parents felt that their perceptions of relationships with others, concerning childrearing in a broad sense, and their perceptions of changes related to their personalities, were becoming more flexible and accommodating. In the "things that hinder cooperation between husband and wife" category, for husbands, regardless of parental awareness development, the results were significant for wives in the low "relationship awareness" and high "sense of resource constraints." In instances where the hindrances to marital cooperation were few, wives were aware of their relationships with others and did not feel constrained or limited by childrearing. It was found that a low level of "things that hinder cooperation between husband and wife" had a positive effect on parental awareness development. According to Kato and Kamiya (2016), a "sense of resource constraints" had a positive effect on "relationship awareness" and "personality awareness" for both husbands and wives, revealing that personality awareness had a positive effect on the partner's relationship awareness [17]. A "sense of resource constraints" is not necessarily a negative aspect as it provides an opportunity for developmental change as a parent. Constraints are the degree of self-directed engagement within the parental role. This is thought to be an "investment" in human development, and the sense of constraint felt by the wives but not by the husbands corresponds with the "relationship awareness" and "personality awareness" components of the parental awareness development, which explains the reason behind the wives' high scores across all the areas [18].

CONCLUSION

A two-stage survey was conducted to develop the married couple co-parenting awareness scale. A quantitative survey consisting of the 44-item married couple parenting scale, the married couple parenting adjustment scale, the marriage "reality" scale, and the parental awareness development scale was conducted. In addition, the characteristics of co-parenting were analyzed in relation to parenting attributes and parental awareness development. The development of this new scale provides invaluable information that contributes to the social sciences, family sciences, and child development. Heterosexual parents who adopt effective co-parenting strategies create a positive home environment for their family. They ultimately provide their children a stable and healthy upbringing, giving them the most conducive surroundings for growth. The scale has highly useful implications for therapists, social workers, and child life specialists who wish to help married parents adopt effective co-parenting strategies.

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