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Maternal Styles of Talking about Child Feeding across Sociodemographic Groups

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Abstract

This study sought to identify maternal styles of talking about child feeding from a semi-structured interview and to evaluate associated maternal and child characteristics. Mothers of preschool-aged children (n = 133) of diverse race/ethnicity and socioeconomic status (SES) (45 lower SES black, 29 lower SES white, 32 lower SES Hispanic, 15 middle to upper SES white, 12 middle to upper SES Asian) participated in a semi-structured interview about feeding. Interviews were audio-taped and transcribed. Themes were identified, and individual interviews were coded within these themes: authority (high/low), confidence (confident/conflicted/unopinionated), and investment (deep/mild/removed). Demographic characteristics were collected and a subset of children had measured weights and heights. Cluster analysis was used to identify narrative styles. Participant characteristics were compared across clusters using Fisher's exact test and analysis of variance. Six narrative styles were identified: Easy-Going, Practical No-Nonsense, Disengaged, Effortful No-Nonsense, Indulgent Worry, and Conflicted Control. Cluster membership differed significantly based on maternal demographic group ($P < .001$) and child weight status ($P < .05$). More than half (60%) of children of mothers in the Conflicted Control cluster were obese. Maternal styles of talking about feeding are associated with maternal and child characteristics.

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Keywords

feeding behavior; maternal-child interactions; obesity; preschool children

INTRODUCTION

Maternal feeding style, defined as how a mother interacts with her child around eating, is believed to be an important contributor to a child's eating behaviors (1) and risk of obesity (2). Understanding maternal beliefs about feeding, which differ on the basis of race/ethnicity (3) and socioeconomic status (SES) (4) is important in the context of the current obesity epidemic, which disproportionately affects these populations (5,6).

Maternal feeding styles have been broadly conceptualized in a number of ways often related to demandingness and responsiveness (7), from Baumrind's classic parenting styles (8). In the realm of child feeding, demandingness or increased control refers to how the parent sets limits with regard to food and mealtime, whereas responsiveness refers to how the parent encourages eating and involves the child in mealtime choices (7). Some studies have linked demanding or controlling feeding practices such as restricting a child's access to palatable foods (9,10) or forcing a child to clean their plate (11) with obesity-promoting behaviors. Other studies have shown that less demandingess, as seen in permissive or indulgent feeding styles, is associated with lower consumption of nutrient-rich foods (e.g. fruits and vegetables) (12) and higher child body mass index (13).

Although prior research has primarily relied on questionnaires (14), this methodology may not be ideal for investigating matters as complex as maternal feeding style for several reasons. First, it is unclear if mothers' interpretations of questionnaire items are valid, particularly among low-income and minority groups (15). Furthermore, cross-cultural differences in questionnaire response style have been described, including preference for extreme responses among racial/ethnic minorities (16). Importantly, in clinical practice, a provider does not use questionnaires but relies on a mother's narrative about her child, which is inherently filled with the mother's subjective thoughts and emotions (17). For example, a mother's narrative may be well articulated and very detailed, conveying well thought-out concerns, confidence and satisfaction with her approach (18). Other mothers' narratives may be less well thought out and non-descript (19). Experienced clinicians attend to a mother's narrative style, hearing not only the content of her responses to the clinician's questions, but also the style with which the mother talks about feeding.

Maternal narrative styles are important for several reasons. Foremost, they are thought to reflect the mother's internal feelings that she may not yet fully realize or appreciate (20) and these internal feelings predict children's outcomes (21–23). These styles shape interactions with clinical providers in important ways. First, they help to shape clinical impressions from which the provider chooses what information to deliver and how to deliver it. Secondly, some of these styles have the potential to shape the clinical interaction in ways that are not productive. For example, narrative styles that seem disinterested may lead the clinician to assume that the mother is not invested and to end the conversation prematurely.

This study therefore sought to identify common styles with which mothers talk about feeding their preschool-aged children. We focused on the preschool age range because it has been described as a sensitive period for food preference formation (24) and the development of long-lasting eating habits (25). This study also sought to determine whether maternal styles of talking about feeding are associated with characteristics of the mother or the child. To accomplish this goal, a semi-structured interview, a methodology often used to study

parenting (26), was used to elicit maternal narratives about feeding. Individual mothers were ultimately categorized into one of the identified narrative styles, and characteristics of the mothers and children were quantitatively examined in relation to these narrative styles.

METHODS

Sample and Recruitment

Mother-child dyads were recruited from rural and urban areas in the midwestern United States via a flyer seeking "mothers of 3- to 6-year-old children to better understand children's eating behavior and how mothers feed their children". Eligible participants were biological mothers able to speak English or Spanish fluently. The child could not have significant developmental delays, and the mother or child could not have any medical condition that may affect appetite or eating. A purposive sampling strategy was used to achieve a diverse cohort with regard to maternal race/ethnicity and socioeconomic status (SES). The child attending Head Start and the mother having less than a four-year college degree defined lower SES. Middle to upper SES was defined by the mother having a four-year college degree or more, private health insurance, and a household income greater than 200% of the federal poverty line (27). We therefore identified 5 demographic groups: lower SES white, lower SES black, lower SES Hispanic, middle to upper SES white, and middle to upper SES Asian. The Institutional Review Board approved the study. Mothers gave written informed consent and were compensated $20 for their participation.

Data Collection

The mothers participated in a semi-structured interview (mean length 47.4 (standard deviation 23.0 minutes, range 16.7 to 133.4) with a trained interviewer matched to the mother's race/ethnicity. A bilingual native Spanish speaker interviewed Hispanic mothers. The interviewers administered a set of open-ended questions (Table 1) and were trained to avoid giving positive, negative, or leading reactions to the mother's answers. Interviews were audio taped and transcribed and Spanish interviews were translated to English before coding. Demographics were gathered by questionnaire and maternal weight and height were measured. For the lower SES sample (n = 83) children's measured weights and heights were available and children were categorized as obese versus not based on the Centers for Disease Control growth charts and standards (28).

Analysis of Interview Data

All interviews were read by three of the investigators, each of whom generated their own list of salient themes that emerged. Of these 17 themes, 11 were consistently identified by all three investigators. Discussion of these 11 themes took place over a series of group meetings and was informed by the expertise of study investigators across several disciplines. Of these 11 themes, authority, confidence, and investment were targeted for further investigation. These three themes were selected because they reflected beliefs and values, as opposed to simple content and practices, and capturing beliefs and values is the strength of the semi-structured interview over a questionnaire. In addition, these three themes were reflective of conceptualizations in the general parenting and feeding behavior literatures and have been linked with child social, cognitive, and behavioral outcomes (29–33). A coding scheme was developed that enabled categorization of individual mothers within these dimensions (Table 2). The validity and reliability of coding themes from parental narratives has been demonstrated in prior work (34,35). Two readers coded 25% of the interviews and inter-rater reliability by Cohen's kappa was good (36) (κ = .72, .75, and .72 for authority, confidence, and investment, respectively). For nine participants, the interview was repeated 2.8 (SD 0.1) years later and test-retest reliability was excellent (36) for authority (κ= .77) and investment (κ = .80). For confidence, test-retest reliability was good (36) (κ = .44).

Statistical Analysis

Cluster analysis was performed to create groups of data with a high degree of association based on individual mothers' categorizations within each domain of authority, confidence, and investment. The Hamming distance, (the percentage of mothers' categorizations that differ across these domains) was used to derive the clusters (37). The clusters were identified and descriptive names, developed by the authors, based in part on prior literature (12,34), were applied. To evaluate differences across clusters with regard to interview duration, child sex, age, status as first child, weight status; maternal sociodemographic group, age, status as working outside the home, and weight status, we used the Fisher's exact test for discrete measures and analysis of variance (ANOVA) for continuous measures. The p-value for the Fisher's exact test was calculated directly or based on the Monte Carlo method using 100,000 simulations. Statistical significance was set at $p = 0.05$ for all analyses.

RESULTS

Characteristics of the sample are provided in Table 3. The sample was 21.8% lower SES white, 33.8% lower SES black, 24.1% lower SES Hispanic, 11.3% middle to upper SES white, and 9.0% middle to upper SES Asian. The children were on average 4.54 (SD 0.77) years old. About half (50.8%) of the children were first-born children and about a third (34.2%) of the mothers worked outside the home. More than a third (39.3%) of the mothers were obese. Of the 83 children with measured weights and heights, 20.5% were obese.

With regard to maternal narrative styles, about half of the mothers were high authority (53.4%) and half low authority (46.6%). Most (57.9%) of the mothers were confident, 24.8% were conflicted, and 17.3% were unopinionated. Most (51.1%) of the mothers exhibited mild investment, 32.3% deep investment, and 16.5% were removed.

Associations Between Narrative Style and Maternal and Child Characteristics

Table 3 also shows the six narrative styles identified in the cluster analysis and the associations with maternal and child characteristics. Across narrative styles there were significant differences in interview duration, child weight status, and maternal sociodemographic group. There were no significant differences across narrative styles in child sex, age, status as first child, maternal age, status as working outside the home, or maternal weight status.

Table 3 also provides descriptive information about each style. The six narrative styles were:

Practical No-Nonsense (n = 29; 21.8%)—These mothers had a confident, mildly invested, high authority style. This is one of the two groups in which white mothers (of both lower and middle to upper SES) tended to cluster, comprising 62.1% of the group.

Effortful No-Nonsense (n = 19; 14.3%)—These mothers were universally confident, high authority, and deeply invested. These mothers were similar to the Practical No-Nonsense mothers but were more deeply invested; they tended to give more passionate, expansive narratives describing their rationale for their feeding approach. This is one of the two groups in which white mothers (of both lower and middle to upper SES) tended to cluster, comprising 52.6% of the group.

Easy-Going (n = 32; 24.1%)—These mothers had a mildly invested, low authority style. This was one of the two groups in which lower SES black mothers clustered; 1 in 3 lower SES black mothers were in this group.

Disengaged (n = 22; 16.5%)—These mothers presented as unopinionated about feeding. Their narratives were short and did not provide much evidence of investment in feeding. These mothers rarely articulated any planfulness about how they feed. Notably, they frequently would provide expansive narratives in response to interview questions about other topics (e.g., about their child's personality or activity level), but often seemed bewildered or perplexed by the questions about feeding. None of the children in this group were obese. This is the second group in which the lower income black mothers clustered, making up 77.3% of this group.

Indulgent Worry (n = 16; 12.0%)—These mothers were all deeply invested and low authority. Confidence was not a strongly defining domain, but mothers were often conflicted; and never unopinonated. Most (75%) of the group members were Hispanic.

Conflicted Control (n = 15; 11.3%)—These mothers were universally conflicted and high authority. Investment was not a defining domain, but these mothers were never removed in their investment. More than half (60%) of children of mothers in this cluster were obese.

DISCUSSION

Our study makes several new contributions to the literature. First, we identified narrative styles about feeding into which mother-child dyads with particular characteristics tended to cluster. White mothers tended to have a Practical No-Nonsense or Effortful No-Nonsense narrative style, lower SES black mothers tended to have either an Easy-Going or Disengaged narrative style, and lower SES Hispanic mothers tended to have an Indulgent Worry narrative style. There were no characteristics independently associated with SES.

There is precedent for this pattern of styles across racial/ethnic groups in prior literature. With regard to lower SES black mothers, similar to our findings, prior work has characterized an "uninvolved" (7) feeding style. Others (38), however, have described greater variability in feeding style across this sociodemographic group. Future work with larger samples of lower income black mothers may help to better understand these differences. Other work has also described Hispanic mothers as "permissive" (7) or "accommodating" (39). Not all studies have agreed, with some studies describing both black and Hispanic mothers as having stricter, more authoritarian styles of feeding (39). These discrepancies may be accounted for by differing study methodologies. For instance, in studies examining child feeding style in lower SES black mothers, those using questionnaires have tended to identify the black mothers as having an authoritarian style (2), while those using semi-structured interviews have identified a laissez-faire style (38). Unlike others (4), this study did not find an independent association between maternal feeding style and SES. This may have been due to the limited sample size in this study, and future work should examine the possible independent effects of race/ethnicity and SES on maternal feeding styles.

In the nine follow-up interviews conducted to establish the test-retest reliability of the interview, as noted above (see Methods), the greatest change in mothers' narrative style over two years in early childhood occurred in the domain of confidence, and all of those changes occurred among mothers who were originally conflicted and also had an overweight child at the first interview. Mothers who were conflicted were essentially on the brink of change. However, two years later, some had become unopinionated, which we interpret to mean that they had in some sense "given up". Others became confident, which we interpret to mean that they had successfully addressed the child's weight status with a change in their parenting which generated a sense of confidence in themselves. Equally plausible, however,

is that the mothers were not successful in changing the child's weight status, but they simply reframed the child's weight status to divest themselves of responsibility, and therefore carried forward confident in their parenting approach. Future longitudinal work that includes the child's weight status at the time of the repeat interview is needed to sort out these possibilities.

The narrative styles identified may be recognizable by providers in their clinical encounters. For example, the Easy-Going and Disengaged groups are likely to challenge clinicians attempting to give advice about feeding. Mothers in the Easy-Going group do not strive to feed "by the book", and appear to be quite comfortable in their low authority approach. They are unlikely to be particularly receptive to or interested in an agenda of rules and advice provided by the clinician. Mothers in the Disengaged group likely present as distracted, giving short and somewhat uninformative answers when the clinician attempts to gather information about feeding. It must be emphasized that these mothers expressed care and concern for their children, speaking at length and in great detail about other aspects of child rearing, but not however, about feeding. For these mothers, child feeding may be approached without much cognitive investment or emotion, which are not necessarily negative traits. Prior literature suggests that the lower SES black mothers who tend to be in these groups may be less apt to think about parenting in domains (e.g., of bedtime, feeding, or toilet training), and instead think about parenting as a general approach that traverses domains (40). Therefore, the feeding domain-specific rules and structure promoted in the lay press and driving the agenda of advice given by clinicians may simply not resonate with the frame of parenting for these groups, which may underlie their apparent disengagement.

The Indulgent Worry group also likely presents a challenge to the clinician in that they are strongly devoted to indulging the child's food preferences. This commitment is rooted in a great deal of affect and passion that is unlikely to change in response to straightforward advice given by the clinician. On the other hand, these mothers are also worried and therefore may be receptive to feeding advice if presented in a way that is sensitive to their beliefs and values, and helps to address their probable feelings of helplessness regarding taking charge in feeding interactions. Future work might focus on how best to tailor feeding advice for this group.

Finally, the Practical No-Nonsense and Effortful No-Nonsense groups likely present relatively straightforward counseling opportunities for the clinician. These mothers tend to be "by the book" in their feeding strategies, and are both comfortable and confident in their approach. The Practical No-Nonsense mothers may be simply perpetuating the straightforward approach to feeding with which they themselves were raised, which seems to work and requires little cognitive energy. The Effortful No-Nonsense group, however, tends to be of relatively lower socioeconomic status. They may be adopting new feeding strategies that they did not experience growing up, and feeding therefore requires more cognitive energy.

Strengths of our study include the diverse sample and the unique open-ended interview format with qualitative analysis. To our knowledge, only one other study has used an individual interview approach to examine feeding (38), however the sample was small, limited to low-income black mothers of infants and the focus of the interview was on the content, and not the narrative style. There are several limitations to our study. The sample size was small for the purpose of identifying differences across sociodemographic groups. In addition, only a small subset of lower SES children had anthropometric data. Therefore, conclusions regarding associations between child obesity and maternal narrative style must be made with significant caution until the findings are replicated in a larger and more diverse sample that includes both maternal narratives and child anthropometric data for all

participants. The black and Hispanic mothers were also universally of lower SES, while the Asian mothers were universally of higher SES, which limited our ability to separate the effects of race and socioeconomic status. With regard to the Hispanic mothers, there is the potential for loss of meaning during translation from Spanish to English. Furthermore, narrative styles may differ by acculturation and among ethnic sub-groups.

CONCLUSION

This study has highlighted the differences that exist in mothers' narrative styles when discussing feeding their preschool-aged children. Better recognition and understanding of maternal narrative styles may lead to increased engagement of parents in a partnership around childhood obesity prevention and intervention. Identifying an "ideal" style of child feeding based on this or other work is a challenge for a number of reasons but primarily because the child being non-overweight may not be the most important or only outcome of interest. Future research with larger samples should be conducted to disentangle the relationships between race/ethnicity and socioeconomic status in maternal narrative style. Longitudinal work is also needed to elaborate maternal feeding narrative styles further, test their stability, and examine their predictive value for children's outcomes.

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TABLE 1

Prompting questions from semi-structured interview

How do the people in your house usually eat their meals on a typical day?
What works well and what does not?
Can you describe yesterday's dinner?
How did you feel about it?
Is there anything that you would change that would make it a better experience from your perspective?
What are special foods for you and your child? Why are these special?
How would you describe your child's activity level?
Do you have any concerns about your child's activity level?
How is it similar or different from your own?
Do you do anything to help change it? How does that work?
How would you describe your child's personality?
Would you say he/she is typically easy to get along with or more challenging? How so?
Do you ever worry that your child doesn't or might not eat enough? What do you worry about? What might happen?
Do you ever give your child food as a reward or motivation?
Can you give an example?
How do you think it works?
How were you fed when you were growing up?
Do you see similarities or differences to your own way of feeding your kids?
How do you think your mother felt about the way she fed you?
How do you feel about your own family weight?
Was weight ever hard for you?
What does overweight mean to you?
What does obese mean to you?
What causes a child to be overweight?
Can you help me brainstorm some things parents can do to keep their children from becoming overweight? Do you do any of these things?
Do you think your cultural background plays a role in how you think about food and weight? If so, how?

TABLE 2

Maternal narrative coding schemes

	Authority
High Authority	The mother sets limits and structure for food and mealtime. She guides the child's food choices and decisions around eating pertaining to what, when, where, or how much is eaten. High authority practices can be focused on either encouraging or discouraging intake but it is clear that she is in control.
Low Authority	The mother sets few or no expectations or rules surrounding feeding for the child. She allows the child to drive the decisions about what, when, where or how much is eaten.
	Investment
Deeply	There is a sense that love and concern is expressed through her feeding practices. She speaks passionately and has invested significant cognitive energy in this topic demonstrated by an expression of many complex thoughts about feeding her child.
Mildly	The mother exhibits at least some sense that she has given thought to the child's eating, but she does not speak passionately and her interview is not characterized by significant affect. She may have a few complex thoughts regarding feeding but lacks fervor and enthusiasm when describing child feeding.
Removed	The mother is relatively indifferent to the child's eating habits, unconcerned and shares limited thoughts related to feeding. She may present as neglectful, or may simply present as unconcerned, but not necessarily in a negative way.
	Confidence
Confident	The mother does not often question her decisions about how she chooses to feed her child, and is confident that her child is eating properly. May have some doubts but they do not overpower her strong feelings that she is doing the right thing for her child.
Conflicted	The mother has doubts and is unsure if she is making all the "right choices" about feeding her child. Mother may be confident in some aspects of feeding, but questions if her child is being fed properly. May express worry, concern, or uncertainty about her child's' diet, weight and health with regards to nutrition.
Unopinionated	The mother does not express many thoughts on feeding her child. She is neither confident nor conflicted. May be comfortable with child's eating, but does not express in detail how she feeds her child (illustrating confidence) and may be unable to thoroughly answer questions.

TABLE 3

Narrative Styles and Associated Characteristics

Maternal Narrative Styles	Easy-Going	Indulgent Worry	Effortful No-Nonsense	Conflicted Control	Disengaged	Practical No-Nonsense	Total	*P*
N	32	16	19	15	22	29	133	
Coded Interview Categories								
				N (%)				
Authority								***
High	1 (3.1)	0 (0.0)	19 (100.0)	15 (100)	7 (31.8)	29 (100)	71 (53.4)	
Low	31 (96.9)	16 (100)	0 (0.0)	0 (0.0)	15 (68.2)	0 (0.0)	62 (46.6)	
Investment								***
Removed	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	22 (100)	0 (0.0)	22 (16.5)	
Mildly	32 (100)	0 (0.0)	0 (0.0)	7 (46.7)	0 (0.0)	29 (100)	68 (51.1)	
Deeply	0 (0.0)	16 (100)	19 (100)	8 (53.3)	0 (0.0)	0 (0.0)	43 (32.3)	
Confidence								***
Confident	18 (56.2)	6 (37.5)	19 (100)	0 (0.0)	5 (22.7)	29 (100)	77 (57.9)	
Unopinionated	6 (18.8)	0 (0.0)	0 (0.0)	0 (0.0)	17 (77.3)	0 (0.0)	23 (17.3)	
Conflicted	8 (25.0)	10 (62.5)	0 (0.0)	15 (100)	0 (0.0)	0 (0.0)	33 (24.8)	
Illustrative Supporting Quotation	*There is always a flow to our dinner. If I'm making asparagus, I know she won't eat that, so I'll make peas 'cus I know she'll eat those. I guess that I've learned to accommodate her.*	*I do worry that he doesn't eat enough. He doesn't ask me a lot to eat and I'm the one that is begging him to eat. I do worry because if I'm not pushing him, he doesn't eat. You know he is gordito but one never knows.*	*She's really picky so she don't eat much. She won't eat nothing, no meats. So I'll just cook and prepare whatever she'll eat along with what me and my other daughter would eat. But I make sure we all sit together at the table and eat.*	*I feel bad about not giving it to him. And I don't want it to be such a struggle in terms of food. I don't want to sort of create this food issue but um, we feel pretty adamant - we try not to give them sort of the idea that if they don't like what's for dinner then they can have something better*	*I don't really think about it. It's just, I don't know, eating is just something, something we do. I don't, I don't really think about it like that. It's just, we eat.*	*They both had grilled cheeses, if they pick something that I am not a huge fan of then they usually can't get fries. So he had mandarin oranges and she had apple slices, so that worked out pretty well.*		
Associated Demographic Characteristics								
				N (%)				
Maternal Sociodemographic Group								***
Lower SES white	5 (15.6)	2 (12.5)	6 (31.5)	3 (20.0)	2 (9.1)	11 (37.9)	29 (21.8)	
Lower SES black	15 (46.9)	1 (6.2)	2 (10.5)	5 (33.3)	17 (77.3)	5 (17.2)	45 (33.8)	
Lower SES Hispanic	7 (21.9)	12 (75.0)	6 (31.6)	5 (33.3)	1 (4.6)	1 (3.5)	32 (24.1)	

Maternal Narrative Styles	Easy-Going	Indulgent Worry	Effortful No-Nonsense	Conflicted Control	Disengaged	Practical No-Nonsense	Total	*P*
Middle to upper SES white	1 (3.1)	1 (6.2)	4 (21.1)	1 (6.7)	1 (4.6)	7 (24.1)	15 (11.3)	
Middle to upper SES Asian	4 (12.5)	0 (0.0)	1 (5.3)	1 (6.7)	1 (4.6)	5 (17.2)	12 (9.0)	
Child male	18 (56.3)	6 (37.5)	12 (63.2)	10 (66.7)	10 (45.5)	15 (51.7)	71 (53.4)	
First child	16 (51.6)	5 (31.3)	13 (68.4)	9 (60.0)	8 (40.0)	15 (51.7)	66 (50..8)	
Mother works	10 (38.5)	4 (25.0)	5 (26.3)	5 (35.7)	5 (31.3)	12 (41.4)	41 (34.2)	
Mother obese	9 (37.5)	8 (50.0)	5 (26.3)	7 (50.0)	6 (40.0)	11 (37.9)	46 (39.3)	
Child obese[a,b]	4 (22.2)	2 (13.3)	2 (15.4)	6 (60.0)	0 (0.0)	3 (18.8)	17 (20.5)	*
				Mean (SD)				
Child age, years	4.65 (0.78)	4.33 (0.77)	4.55 (0.93)	4.36 (0.84)	4.54 (0.50)	4.62 (0.81)	4.54 (0.77)	
Maternal age, years	30.6 (6.3)	33.3 (5.9)	30.1 (6.0)	30.7 (5.8)	30.7 (8.1)	32.1 (5.7)	31.2 (6.3)	
Interview length, minutes	40.0 (19.0)	68.4 (23.1)	65.2 (24.3)	52.1 (25.2)	28.2 (9.8)	44.4 (14.2)	47.4 (23.0)	***

[a] N = 17. Limited to 83 in the subset with anthropometrics

[b] Child obesity was defined as body mass index • 95th percentile for age and gender

[c] N = 120

* P≤ 0.05

*** P≤ 0.001