

The Relationship Between Children's Masturbation Behavior and Their Mothers' Temperament and Character Dimensions: A Case-Control Study

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ABSTRACT:

The relationship between children's masturbation behavior and their mothers' temperament and character dimensions: a case-control study

Objective: Childhood masturbation (CM) is the self-stimulation of the genitalia by a child with the intention of obtaining pleasure and is frequently associated with physical distress signs and symptoms. In this study, we aimed to examine the temperament and character traits of mothers of a clinical sample of infants and young children, who presented with the complaint of masturbation compared to a control group. Sociodemographic and clinical features of the children in the study group were also assessed.

Methods: Fifty two infants and children (36 girls and 16 boys) with a mean age of 4.4±1.7 years exhibiting masturbation and their mothers were included in this study together with a control group consisting of 52 age, gender, and age of mother-matched infants and children. Socio-demographic data and clinical information was obtained through interviews by the researchers and the Temperament and Character Inventory (TCI) was completed by the mothers. All statistical analyses were performed using SPSS for Windows, Version 20.0.

Results: The Total Novelty Seeking (NS), Impulsivity subscale (NS2) of Novelty Seeking, Attachment (RD3) subscale of Reward Dependence, and Transpersonal Identification (ST2) subscale of Self-Transcendence scores were significantly higher in the study group; while the Total Self-Directedness and Responsibility subscale of the (SD1) Self-Directedness scores were significantly lower in the mothers of CM compared to control group. According to the logistic regression model, the odds of exhibiting masturbation increased in a child as the scores of Impulsiveness subscale of Novelty Seeking dimension and the Attachment subscale of Reward Dependence scores increased and the scores of Responsibility subscale of Self-Directedness scores were decreased in the mothers of CM group.

Conclusions: The findings may indicate a relationship (as a mediator) between problematic childhood masturbation and the temperament and character traits of their mothers, but it should be further studied in large samples.

Keywords: childhood masturbation, temperament and character, mother, impulsivity attachment, responsibility, transpersonal identification

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INTRODUCTION

Childhood masturbation (CM) is the self-stimulation of the genitalia by a child with the intention of obtaining pleasure (1) and is frequently associated with unusual posture, flushing, sweating, grunting, and rhythmic movements

(2,3). During masturbation, the child does not lose consciousness and distracting the child would usually stop the behavior (3).

When developmental stages are examined, it is observed that an infant can achieve pleasure from genital area cleaning by as early as 3-4 months of age. Most boys

begin genital play at 6-7 months; while girls begin at 10-11 months. Masturbation is different from genital play. Masturbating infants are eager and hard to distract (2). Attempting to distract their attention might cause frustration and anger (4-6). In addition, excessive masturbation in early childhood might cause parental distress of various degrees (7-9).

Limited number of studies about CM showed that the onset of masturbation is often associated with a genitourinary disorder or a stressful life event (9-12). It has been argued that children with a history of sexual abuse might present with a variety of problems, including excessive masturbation (13). Furthermore, it has been emphasized that children with emotional and behavioral problems are more likely to display inappropriate sexual behaviors (14), and children displaying excessive masturbation behavior had significantly higher scores from the subscales of thought disturbances, delinquent and aggressive behavior, sexual problems, and externalizing behaviors compared to the healthy controls (15).

Loss or reduction of the satisfactory object relations is another issue regarding the emergence of CM (9,16). According to McCray (16), an inadequate mother-child relationship, which may result for example as a result of the birth of a sibling or the emergence of an illness in mother, might cause an inadequate object relationship while the mother is still alive. He reported that excessive masturbation behavior was altered in a small sample of five children when the attitudes of their parents changed positively and the children received appropriate tactile stimuli by the parents. The mother-child relationship and tactile contact have an undeniable impact on the physical and mental development of a child. At this point, the personality of the caregiver and the communication patterns with the child are regarded of greatest importance (9,12,16). In this context, examining the temperament and character traits of mothers, which are considered to be associated with the mother-child relationship, may elucidate the factors that might contribute to the emergence of inappropriate behaviors in children such as CM.

In this present study, we aimed to examine the relationship between childhood masturbation with the temperament and character traits of the mothers in a clinical sample of children presented to a child and adolescent psychiatry outpatient clinic compared to the controls. We also aimed to examine the socio-demographic

and clinical features of children exhibiting masturbation compared to the control group.

MATERIAL AND METHODS

Study Participants

Children referred to child and adolescent psychiatry outpatient clinics in three different centers due to masturbation were enrolled and studied. Children who showed genital self-stimulation interfering with home and/or school functioning and/or strongly disturbing the parents were included in the study. The criteria for inclusion in the study were the presence of stereotyped episodes of self-stimulation accompanied by flushing, sweating, grunting, and rhythmic movements, normal laboratory and physical examination findings, the biological mother being the primary caregiver, and the educational level of the mother being sufficient to complete the study forms and questionnaires (at least 5 years of education). The exclusion criteria were the presence of autism spectrum disorder (ASD), developmental delay, signs of puberty, history of epilepsy, history of sexual abuse, and participant's refusal to participate in the study or inability to provide accurate information. The study protocol was approved by the Ethics Committee of Suleyman Demirel University School of Medicine, and all study participants provided written informed consents, following the study has been thoroughly explained to them.

Children who were brought to any of the three pediatric outpatient clinics formed the control group. They were matched to the study group with regard to age, gender, and age of mother. In the control group, exclusion criteria were a known history of masturbation, presence of ASD, developmental delay, a serious medical illness or psychiatric disorder, and low educational level of the mother.

A total of 52 out of 67 children with CM were included in the study. Fifteen children were not included in the study due to the following reasons: low educational level of the mother (n=7); presence of ASD and/or any developmental delays (n=5); insufficient data (n=2); and suspicion of having been sexually abused (n=1). The control group also consisted of 52 children and in each of the three outpatient clinics these children were chosen among subsequently presented to the outpatient clinic who met the inclusion and matching criteria.

Psychometric Measurements

Socio-demographic and Clinical Information Form (SCIF). This form includes sociodemographic variables including gender, age, marital status, the number of children, education, location, household members, occupation, employment status, the number of siblings, birth order, living in nuclear vs extended family, family history of chronic disease, other known physical illnesses, and previous psychiatric treatments and clinical information such as frequency, time and duration of the masturbatory behavior, history of a genitourinary disease. Parts about masturbatory behavior of the SCIF were used only in the CM study group.

Temperament and Character Inventory (TCI). Cloninger's Temperament and Character Inventory (TCI) is a self-administered, 240-item true/false questionnaire (17). The TCI is a 240-item self-administered questionnaire that measures the four temperament dimensions (NS, HA, RD, and P) and the three character dimensions (SD, C, and ST) (18). Temperament refers to automatic emotional responses to experiences and is largely heritable and stable throughout life while character dimensions represent differences in goals, values, attitudes, and self-concept and is moderately influenced by social learning and maturation (18). Character dimensions involve individual differences in higher cognitive processes and they regulate the cognitive processes of sensory perception and emotion activated by temperament, leading to the development of a mature concept of the self in the personal, social, and spiritual arenas (18). The Turkish-TCI has been validated by Kose et al. (19).

Ankara Developmental Screening Inventory (ADSI). ADSI is a widely used developmental screening test for children under 6 years of age in Turkey. It was developed by Savasir et al. in 1992, taking into consideration culture-specific features. This instrument includes 154 items for the mother and the child, which aim to assess four domains of developmental functioning: cognitive language score, fine motor score, gross motor score, and social and self-help score. The total of these four scores is the general developmental score. The raw scores of general development are then converted to standard T scores, which are compared with the scores of children in the

same-age normative groups. The criterion-related validity and concurrent discrimination validity of the ADSI have been studied (21).

Procedure

An experienced child psychiatrist examined the children and filled in the SCIF using detailed clinical information obtained from the mothers. Turkish version of Temperament and Character Inventory (Turkish TCI) was administered to the mothers during the same interview. Underlying medical conditions were ruled out by the physical and laboratory examination of children in the pediatric outpatient clinics. Electroencephalogram, blood, urine, and stool analyses were performed if necessary. ADSI was applied by child development specialists and psychologists to exclude developmental delay.

Statistical Analysis

All statistical analyses were performed using SPSS for Windows, Version 20.0. The variables in the present study were examined with the Shapiro-Wilk's test of normality. An independent sample t-test was used for comparisons variables that were normally distributed and the Mann-Whitney U-test was used for those that were not normally distributed. Within-group correlations between TCI scores were performed using the Pearson's correlation coefficient. The chi-square test was used to compare categorical variables. Hierarchical Multiple Regression analysis was performed to examine the association between the CM and its predictors. A p value less than 0.05 was considered statistically significant.

RESULTS

Sociodemographic and Clinical Characteristics of Sample

The study group consisted of 36 girls and 16 boys, and the mean age was 4.4 ± 1.7 years. There were no statistically significant differences in the mean age of the children ($t=1.063$, $df=102$, $p=0.142$) and of the mothers ($t=-0.656$, $df=102$, $p=0.513$) between the study and control groups. The mean age of onset of masturbation in children in the study group was 32.2 ± 15.5 months, with the lowest age being 6

months, and highest age being 67 months. Six cases (11.5%) reported that masturbation started before the age of 1 year. While 34 of the cases (65.4%) reported that masturbation started before 36 months of age, 18 cases (34.6%) reported that masturbation started at or after 36 months of age.

The time period between the family noticing the masturbation behavior and seeking medical assistance was less than 6 months in 13 cases (6 female, 7 male; 25%), between 6 months-1 year in 6 cases (11.5%), 1-2 years in 16 cases (30.8%), 2-5 years in 13 cases (25%), and longer than 5 years in 4 cases (7.7%). The mean frequency of masturbation was more than 10 times a day in 6 cases (11.5%), 5-10 times a day in 8 cases (15.4%), 1-4 times a day in 26 cases (50%), and 1-6 times a week in 12 cases (23.1%).

The mothers of the children in the study group were asked about the time of the day during which their children exhibited masturbation the most: seventeen of the children (32.7%) exhibited masturbation whenever they could get a chance, 15 children (28.8%) while watching cartoons during the daytime, 10 children (19.2%) at bedtime while falling asleep, 6 children (11.5%) right after using the toilet, 3 children (5.7%) before using the toilet, and 1 child (1.9%) before falling asleep and when frustrated. The duration of masturbation was approximately 10 minutes in 31 cases (59.61%), 30 minutes in 14 (26.9%), and 7 children (13.5%) masturbated for hours when they were not interrupted. The mean duration of masturbation was 13.7 ± 19.8 minutes.

The mean duration of breastfeeding was 17.08 months in the study group (with a SD of 7.25 months) and 17.76 months in the control group (with a SD of 6.22 months). This difference in the average duration of breastfeeding between the groups, however, was not found to be statistically significant ($t = -0.503$, $df = 98$, $p = 0.616$). Comparison of the study group with the control group in terms of feeding patterns, history of genitourinary disorder, and living in an extended family was presented in Table 1.

Comparison of TCI scales and subscales between study group and controls

An independent-samples t-test and Mann-Whitney U-test were conducted to compare TCI scales and subscales scores for the mothers in the study group with control group. The results revealed that there was a statistically significant difference between the patients and controls in terms of Impulsiveness subscale scores of Novelty Seeking ($p = 0.035$); total scores of Novelty Seeking ($p = 0.010$); Attachment subscale scores of Reward Dependence ($p = 0.034$); and Transpersonal Identification subscale of Self-Transcendence ($p = 0.015$) were significantly higher in the mothers of CM compared to the control group. On the other hand, Responsibility subscale scores of Self-Directedness ($p = 0.008$) and total scores of Self-Directedness ($p = 0.013$) were significantly lower in the mothers of CM compared to the control group.

The Predictors of CM behavior

Logistic regression analyses were conducted to determine the variables predicting CM.

As a variable selection method, we used the "enter" method in SPSS. In the logistic regression model, temperament and character traits of the mothers were also included as variables. Since Exploratory Excitability (NS2) and Novelty Seeking (NS) total, and Responsibility (SD1) and Self Directedness (SD) total are strongly correlated (with Pearson's correlation coefficients of 0.717 and 0.701, respectively), we decided to only include NS2 and SD1, but not NS total and SD total in our model to prevent multicollinearity. The variables included in the model were number of siblings, NS2, SD1, Attachment (RD3), and Transpersonal Identification (ST2). With these 5 variables, the variance inflation factor (VIF),

Table 1: Comparison of the Study Group with the Control Group in terms of Feeding Patterns, History of Genitourinary Disease, and Living in an Extended Family

Variable	Study Group (%)	Control Group (%)	χ^2	df	p
History of genitourinary disease	0.28	0.25	0.049	1	0.825
Breastfeeding	0.96	0.98	<0.0001	1	1.000
Pacifier use	0.34	0.34	<0.0001	1	1.000
Bottle use	0.53	0.67	1.449	1	0.229
Living in an extended family	0.25	0.26	<0.0001	1	1.000

*Continuity corrected Chi-Square test was applied

which is the most widely used diagnostic for multicollinearity, computed for each variable is at most 1.233. The results of this logistic regression model can be seen in Tables 3 and 4. The children who masturbate are more accurately classified and the percentage of all cases that are correctly classified is now 71.2%. The pseudo R-squared values (Cox & Snell R Square=0.262; Nagelkerke R Square=0.349) indicate a higher explanatory power for this model.

DISCUSSION

In this study, some socio-demographic and clinical features of children who presented to the child and adolescent psychiatry outpatient clinics in three different centers due to childhood masturbation behavior and the temperament and character dimensions of their mothers were examined. There are a limited number of studies investigating the mothers of children exhibiting masturbation in the current literature (15).

Table 2: Comparison of the Study and Control Groups in terms of TCI Scale and Subscale Scores

Subscales	Case M (SD)	Control M (SD)	(U;Z) or (t,df)*	p
Novelty Seeking (NS)				
NS1 (Exploratory Excitability vs Stoic Rigidity)	5.69 (1.84)	5.54 (1.60)	(1255;-.643)	0.520
NS2 (Impulsiveness vs Reflection)	4.33 (1.89)	3.42 (1.53)	(1035.5;-2.104)	0.035
NS3 (Extravagance vs Reserve)	4.35 (1.30)	3.71 (1.59)	(1077.5;-1.812)	0.070
NS4 (Disorderliness vs Regimentation)	3.75 (1.66)	3.15 (1.35)	(1062.5;-1.924)	0.054
NS (Novelty Seeking Total Score)	18.15 (5.06)	15.79 (3.59)	(958;-2.573)	0.010
Harm Avoidance (HA)				
HA1 (Anticipatory Worry and Pessimism vs Uninhibited Optimism)	6.21 (2.21)	5.79 (1.99)	(1.026,102)	0.308
HA2 (Fear of Uncertainty)	4.98 (1.64)	4.85 (1.55)	(1264;-.583)	0.560
HA3 (Shyness with Strangers)	3.65 (2.22)	3.35 (2.21)	(1252.5;-0.652)	0.514
HA4 (Fatigability and Asthenia vs Vigor)	4.08 (1.99)	3.85 (2.13)	(.571,102)	0.569
HA (Harm Avoidance Total Score)	18.92 (6.02)	17.83 (5.97)	(.933,102)	0.353
Reward Dependence (RD)				
RD1 (Sentimentality)	7.60 (1.73)	7.10 (1.72)	(1079;-1.821)	0.069
RD3 (Attachment vs Detachment)	4.98 (1.66)	4.27 (1.59)	(1031.5;-2.121)	0.034
RD4 (Dependence vs Independence)	2.58 (1.39)	2.87 (1.34)	(1171.5;-1.203)	0.229
RD (Reward dependence Total Score)	15.06 (2.65)	14.23 (2.81)	(1076.5;-1.803)	0.071
Persistence (P)				
P (Persistence)	5.35 (1.71)	5.37 (1.91)	(1329;-.152)	0.879
Self-Directedness (SD)				
SD1 (Responsibility vs Blaming)	4.15 (1.95)	5.19 (1.70)	(945.5;-2.673)	0.008
SD2 (Purposefulness vs Lack of Goal Direction)	5.65 (1.58)	6.23 (1.41)	(1081.5;-1.796)	0.073
SD3 (Resourcefulness vs Inertia)	2.92 (1.47)	3.19 (1.30)	(1202.5;-998)	0.318
SD4 (Self-Acceptance vs Self-Striving)	5.77 (2.53)	6.15 (2.67)	(-.753,102)	0.453
SD5 (Congruent Second Nature vs Bad Habits)	8.85 (1.91)	9.3 (1.98)	(1077.5;-1.814)	0.070
SD (Self Directedness Total Score)	27.35 (6.21)	30.46 (6.42)	(-2.515,102)	0.013
Cooperativeness (C)				
C1 (Social Acceptance vs Social Intolerance)	6.19 (1.67)	6.50 (1.45)	(1218.5;-892)	0.373
C2 (Empathy vs Social Disinterest)	4.29 (1.29)	4.54 (1.58)	(1194.5;-1.050)	0.294
C3 (Helpfulness vs Unhelpfulness)	4.92 (1.22)	5.00 (1.47)	(1288.5;-0.425)	0.671
C4 (Compassion vs Revengefulness)	8.12 (2.28)	7.35 (2.68)	(1112;-1.594)	0.111
C5 (Pure Hearted Principles (Integrated Conscience) vs Self-Serving Advantage)	7.04 (1.31)	7.00 (1.48)	(1341.5;-071)	0.944
C (Cooperativeness Total Score)	30.54 (5.79)	30.37 (6.31)	(1307.5;-290)	0.772
Self-Transcendence (ST)				
ST1 (Creative Self-Forgetfulness vs Self-Consciousness)	5.87 (2.34)	5.54 (2.40)	(1272;-525)	0.600
ST2 (Transpersonal Identification vs Personal Identification)	5.12 (2.36)	4.06 (1.89)	(980.5;-2.437)	0.015
ST3 (Spiritual Acceptance vs Rational Materialism)	7.21 (2.34)	7.15 (2.33)	(0.126,102)	0.900
ST (Self-Transcendence Total Score)	18.19 (5.51)	16.75 (5.28)	(1.363,102)	0.176

*For t-tests, t-values and df (degrees of freedom) were reported. *For Mann-Whitney U tests, U and Z values were reported.

Table 3: Results of the Second Logistic Regression Analysis

Variables	β	OR	%95 CI	p
Number of siblings	0.488	1.629	1.007-2.637	0.047
NS2	0.377	1.457	1.083-1.962	0.013
RD3	0.438	1.549	1.140-2.105	0.005
SD1	-0.319	0.727	0.554-0.952	0.021
ST2	0.185	1.204	0.966-1.500	0.099

Dependent variable: CM behavior

Table 4: Classification Table for the Second Regression Model

Observed	Predicted		Percentage Correct
	Control	Case	
Control	36	16	69.2
Case	14	38	73.1
Overall Percentage			71.2

Turkey is considered to be a sexually repressive country, as Unal (9) indicated in his study that investigated the demographic, medical, and psychosocial features of the CM cases in a clinical sample. Thus, CM behavior might appear more like a parental concern in Turkey compared to the Western societies and this might lead to an increase in referral rates to psychiatrists. Masturbation in girls creates further concerns in parents as compared to CM in boys due to psychosocial and cultural factors, and the parents may seek medical assistance for their daughters in shame and panic.

In the present study, the female-to-male ratio for CM was 2.25. This ratio was consistent with 2.05 in Unal's study (9). Couper and Huynh (5) reported a higher CM prevalence in girls, but social and cultural factors may play a role in these reported values. The onset of masturbation was prior to 36 months in 65.4% of the cases. Onset before 12 months was reported in 11.5% of the cases. In this period, known as the oral stage, the organism is fed by incorporating "stimulus nutriment" with all senses (22). In this period when intense stimuli are required, the pleasure of the child depends on receiving these stimuli. In the situation that enough stimuli could not be received, the child may try to find a pleasure source by him/herself. Reduction (23) or complete cessation of masturbation (16) with improvement in the quality of the caregiver-child relationship in clinical practice supports this finding.

The time period between the family noticing the masturbation behavior and seeking medical assistance was

more than one year in 63.5% of the cases. This may be due to the belief that it was a temporary condition, but later when the behavior persisted, they began to worry. Another reason for the situation could be a feeling of shame and embarrassment and therefore preference to wait.

Thirty-two point seven percent of children masturbate whenever they can. Moreover, it is reported that 13.5% of children masturbate for hours when uninterrupted. This finding may indicate that the child is unable to organize his time and obtain insufficient support in this direction from the parents. On the other hand, this may be a finding demonstrating that the child could not be accurately mirrored by the mother. According to self-psychological theory, the mother's first self-object function is to accept the presence of the baby and reflect the baby's image colored with satisfaction, pride, happiness, joy, enthusiasm, appreciation back to the baby. Sharing and reflecting the pleasure of the presence of child's self and its functioning by the mother are necessary object functions for relieving anxiety of the child and his/her self-continuity and integrity (24). It may be argued that for a child that masturbates excessively, the mother does not reflect her positive feelings sufficiently enough for the baby's presence. The number of children who masturbate at bedtime while falling asleep was remarkable in this study. This finding is consistent with Unal's view that CM may be observed in children with an interfering problem, such as difficulty in initiating or maintaining sleep (9). The child might be using masturbation as a way of coping distress and to facilitate sleep.

There were no significant differences in terms of the proportions of children having a history of a genitourinary disorder, living in a nuclear or an extended family, who were breastfed, who used pacifier and/or bottle between the study and control groups. Previously, Unal (9) stated that the duration of breastfeeding was shorter in masturbating children and the beginning of the

masturbation process was significantly related to weaning. Unal also emphasized that a reduction of time the mother spends with her child may cause further frustration, and masturbation may be related to the loss of comforting contact by mothers. In this present study, the mean duration of breastfeeding was shorter in masturbating children as well, however this difference was not found to be statistically significant.

In this present study, predictive factors of CM were also investigated. It was found that; as the number of children in the family increased, as the Impulsiveness subscale (NS2) scores of Novelty Seeking and the Attachment subscale (RD3) scores of Reward Dependence increased, as the Responsibility subscale (SD1) of Self-Directedness dimension decreased in the mothers, the likelihood of CM behavior increased in their children.

In this study, total scores of the Novelty Seeking dimension (NS) were significantly higher in the study group, consistent with previous studies reporting that Novelty Seeking was highly correlated with histrionic, antisocial, and borderline personality disorders (25,26). Novelty Seeking refers to a heritable bias in the activation and initiation of behavior in response to novelty and individuals high in Novelty Seeking are characterized by curiosity, enthusiasm, and quick engagement with whatever is new and unfamiliar, but also by being impulsive, exploratory, fickle, excitable, quick-tempered, and extravagant. People with this temperament exhibit excessive anger and quick disengagement whenever their wishes are frustrated and this leads to inconsistencies in relationships and instability in efforts (17,18).

Similarly, higher scores on the Impulsivity subscale (NS2) of the Novelty Seeking are positively correlated with increased likelihood of CM. Individuals with high scores of Impulsivity are described as being excitable and quick decision makers based on insufficient information. These individuals often dramatize events and are easily distracted (17,18). Yurtbay and Gorker (15) administered the Parent Attitude Research Instrument (PARI) to mothers of masturbating children and reported that marital conflict and rejection of the housewife role subscale scores were higher in the study group. High scores on the rejection of the housewife role subscale were attributed to worrying about taking responsibility of childcare, dependency on other people, and dislike of spending a long periods of time with their child.

Attachment subscale (RD3) scores of Reward Dependence dimension of the mothers in the study group were statistically significantly higher than those in the control group. This finding shows that the mothers of the masturbating children are very sensitive to rejection and overly concerned about being liked and accepted (17,18). Further studies are needed to examine the effect of the sensitivity to rejection on the mother-child relationship.

In line with our study hypotheses, Self-Directedness scores were found statistically significantly lower in the study group mothers compared to the control group. Low scores in Self-Directedness reflects an individual's tendency to blame other people and external circumstances for what is happening to them, their struggle to find direction, purpose, and meaning in their lives, and generally, they seem to be lacking an internal locus of control, which renders them to define, set and pursue meaningful goals and overcome obstacles in aversive situations. They are described as weak, fragile, blaming, destructive, ineffective, irresponsible, and unreliable. Notably, low levels in Self-Directedness are a major predictor of personality disorders (17,18,25). In the present study, low scores of Responsibility subscale of Self-Directedness (SD1) in the CM mothers appeared as a predictive factor for CM behavior. Similarly, Yurtbay and Gorker (15) reported higher parental conflict scores in masturbating children. They postulated that parental conflict could cause anxiety in the children with CM, which may lead to masturbation to eliminate this distress. The scores of the Transpersonal Identification subscale (ST2) of Self-Transcendence dimension (ST) in the mothers of masturbating children were statistically significantly higher than the control group. Higher levels of ST are linked to patience, unselfishness, spirituality, and creativity, but also linked to naivety and naturalness (17,18). Individuals who score high on transpersonal identification can become deeply emotionally attached to other people, nature, and even the whole universe (17,18). In our logistic regression model, ST2 did not appear as a statistically significant predictor for CM behavior.

This present study has certain limitations. First; we have not included a tool to investigate temperament of infants and young children. Second; it was not investigated in this study whether there was any accompanying psychiatric or personality disorders in mothers. Temperament and character traits can also be affected by presence of personality disorders. Therefore, the conclusions should

not be considered definitive and further studies should be conducted in larger patient samples. Despite these limitations, our findings, especially predictive value of temperament and character dimensions in mothers of CM behavior would help shaping future discussions concerning the degree to which temperamental traits are necessary or sufficient conditions for CM psychopathology. In

conclusion; our data suggest that enhanced understanding of temperament and CM behavior psychopathology relationship may help elucidate the factors that contribute to the emergence of CM and will have important implications for both assessment and prevention of significant psychiatric symptoms in children with masturbation behavior.

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