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Correlates of same-sex sexual behaviors, attractions and nonheterosexual sexual identity in a Turkish sample

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ABSTRACT

Objective: Nonheterosexual sexual orientation is an under researched topic in Muslim countries. The present study aimed at investigating aspects of same-sex sexual orientation in the Turkish cultural context.

Methods: This web-based survey investigated the correlates of same-sex sexual orientation in 517 men and women in Turkey by means of a self-report questionnaire.

Results: The percentages of nonexclusive same-sex sexual behavior (8.1%), attraction (35.4%) and identity (7.8%) observed in this study were somewhat higher than the ones reported in a previous study. Fewer childhood boy typical behaviors, more childhood cross-gender behaviors and earlier age of sexual debut in men and more instances of childhood sexual abuse (CSA) and earlier age of sexual debut in women were the significant predictors of same-sex sexual behaviors. Fewer childhood boy typical behaviors and earlier age of sexual arousal in men and, greater sex drive and CSA in women were the significant predictors of same-sex sexual attractions. Fewer childhood boy typical behaviors and earlier age of sexual arousal in men and, more childhood boy typical behaviors in women were the significant predictors of homosexual or bisexual identity.

Discussion and Conclusion: Compared to the findings from a previous study, the results from this investigation showed somewhat higher percentages of nonexclusive same-sex sexual orientation. The findings from the present study seem to be in line with deductions from the neurohormonal theory.

Key words: Homosexuality, male; Homosexuality, female; epidemiology; associated factors; Turkey

ÖZET

Bir Türk örneklemde eşcinsel cinsel davranış, ilgi ve kimlikle ilişkili etmenler

Amaç: Karşıtcinsel olmayan cinsel yönelim, Müslüman ülkelerde üzerinde az araştırma yapılan bir konudur. Bu bilimsel çalışma eşcinsel cinsel yönelimle ilişkili olabilecek durumları Türk kültüründe araştırmayı amaçlamıştır.

Yöntem: Bu internet anket çalışması, 517 erkek ve kadın arasında eş-cinsel cinsel yönelimin görülme sıklığı ve ilişkili olduğu etmenleri özbildirime dayalı bir anket kullanarak araştırmıştır.

Bulgular: Eşcinsel cinsel davranış (%8,1), eşcinsel cinsel ilgi (%35,4) ve eşcinsel veya biseksüel cinsel kimlik (%7,8) gösterenlerin oranı daha önceki bir çalışmada bulunanlardan daha yüksekti. Çocukluğunda erkek çocuğa has davranışları az sergileme, karşı cinse has davranışları fazla sergileme ve erken cinsel ilişkide bulunma yaşı erkeklerde, fazla çocukluk cinsel istismarı ve erken cinsel ilişkide bulunma yaşı da kadınlarda eşcinsel cinsel davranışların bağımsız yordayıcıları olarak bulundu. Çocukluğunda erkek çocuğa has davranışları az sergileme ve erken cinsel istek duyma yaşı erkeklerde, yüksek cinsel istek düzeyi ise kadınlarda eşcinsel cinsel ilginin bağımsız yordayıcılarıydı. Çocukluğunda erkek çocuğa has davranışları az sergileme ve erken cinsel istek duyma yaşı erkeklerde, çocukluğunda erkek çocuğa has davranışları fazla sergileme kadınlarda eşcinsel veya biseksüel cinsel kimliğin yordayıcıları olarak bulundu.

Tartışma ve Sonuç: Daha önce yapılan bir çalışmadakilerle karşılaştırıldığında, bu çalışmadan elde edilen eşcinsel cinsel davranış, ilgi ve kimlik oranları daha yüksekti. Bu çalışmadan elde edilen bulgular nörohormonal teoriyi destekler niteliktedir.

Anahtar Sözcükler: Eşcinsellik, erkek; Eşcinsellik, kadın; cinsel yönelim; epidemiyoloji; ilişkili faktörler; Türkiye

INTRODUCTION

Understanding the prevalence and correlates of same-sex sexual orientation has scientific, political, clinical and social implications. The scientific literature assumes that homosexual attraction, behavior and identity are the three components of same-sex sexual orientation. The prevalence rate of homosexuality in the general population varies from 1% to 21% depending on which component is assessed.[1] The research indicates that a number of features differentiate persons who have same-sex sexual inclinations from those who do not have such inclinations. Accordingly, these features can be grouped into biological, genetic, behavioral, social-environmental, psychological etc.

One line of research investigates the role of biological-genetic factors in the etiology of same-sex sexual orientation. Neurohormonal or prenatal androgen exposure theory proposes that relative to heterosexual people, men and women with same-sex sexual orientation are exposed to different levels of androgens during fetal sex differentiation. Accordingly, while lesbian/bisexual women were exposed to higher concentrations of androgens (testosterone) prenatally and gay/bisexual men were exposed to lower levels.[2-5] The theory predicts that as a consequence of differential prenatal androgen exposure, some natal males and females show sex-atypical developmental patterns. For instance, where overandrogenized natal females evince male-typical developmental pattern, underandrogenized natal males show a female-typical developmental patterns.

To test the hypotheses deduced from the prenatal androgen exposure theory some studies using anthropometric data investigated whether gay men were shorter and lighter than heterosexual men and lesbians were taller and heavier than heterosexual women or not. For Weill[6] findings support this anticipation only for lesbians but for Blanchard and Bogaert[7] and Bogaert and Blanchard[8] the anticipation holds true for gay men as well. Recently Bogaert and Liu[9] with Chinese participants found men with same-sex sexual inclinations to be shorter than heterosexual men. Concerning the sexual maturation, scientific evidence indicates that the onset of puberty in homosexual men resembles the onset of puberty in heterosexual women but such an association was not found for homosexual women.[6] Some research findings suggest that homosexual sexual orientation is associated with left-handedness[10-11] but some others failed to demonstrate such an association.[12-13]

Related to the neurohormonal theory, research established a robust relationship between childhood gender atypicality and same-sex sexual orientation. For instance, it is well documented that opposite sex gender-typical behaviors were found to be more frequent in gay men and lesbian women than heterosexual people.[14-18] Childhood gender-atypicality or gender nonconformity as it has usually been designated is a stable attribute from childhood to adolescence[19] and is related to prenatal hormones.[20-22] The research also reveals that genetics play a role in the etiology of childhood gender nonconformity.[23]

Other line of research documented an association between same-sex sexual orientation and childhood sexual abuse.[24-27] However, for a better understanding of the relationship between CSA and same-sex sexual orientation, a more nuanced approach should be adopted. For instance, the findings from Eskin et al.[24] indicate that sex of both the person (victim) and the perpetrator should be taken into account to better understand the association between CSA and same-sex sexual orientation. Some researchers point out that childhood behavioral characteristics of persons may have a causal role in the relationship between CSA and same-sex sexual orientation.[28] For instance, Roberts et al.[29] found elevated exposure to childhood physical, psychological and sexual abuse in persons characterized by childhood gender nonconformity compared to those who were gender normative before age 11.

The relationship between early child-parent relationships and same-sex sexual orientation has had a wide acceptance both in psychological developmental theories and in the public. Some prior research found that persons with homosexual orientation had negative, frustrating and distant relationships with their fathers.[30-33] A study by Eskin et al.[24] showed that persons who engaged in same-sex sexual behaviors and self-identified as homosexual or bisexual reported having more distant relationships with their fathers. It is possible that emotional and behavioral characteristics (in a gender atypical direction) of persons with same-sex sexual orientation may have caused this rather than being an etiological factor in the genesis of homosexuality.

There are two methodological flaws of the existing scientific literature examining the scope of and the associated factors with same-sex sexual orientation. First, an overwhelming majority of empirical work on same-sex sexual orientation are conducted in industrialized western democracies where homosexual sexual orientation and associated features meet with higher levels of tolerance and can be discussed publicly. On the other hand, even the public discussion of these issues is not possible in the majority of world's human populations. For instance, there is a deep silence about same-sex sexual orientation and related factors in the Muslim world. This may put a question mark on the generality of hitherto obtained scientific findings. Second, the majority of research on homosexual orientation and associated factors are single and at most two variable investigations. It is a well-known fact that the most psychological and developmental variables do not exist in isolation but they are all intertwined.

Having these considerations in mind, the present empirical investigation was designed to explore the scope of and factors associated with same-sex sexual orientation in a group of Turkish men and women recruited through a web-based survey. Although homosexuality carries a stigma and meets with social intolerance, it is not a criminal act according to the Turkish penal code. A previous study[24] with Turkish university students found that almost 7% reported same-sex attractions, 5% same-sex sexual behaviors and 2% self-identified as homosexual or bisexual. Thus the major aim of the current study was to replicate previous findings and extend them to variables not covered in the previous study by controlling the effects of others.

METHODS

Participants

Participants in the study were 517 men and women (95 men, 18.6%) between the ages of 18 and 58 years. There were significantly more women than men in the sample, $X^2 = 200$, $p < 0.001$. Mean age of the sample was 25.53 (SD = 4.90) years. Men (M = 27.28; SD = 6.14) were significantly older than women (M = 25.14; SD = 4.50), $t_{(515)} = 3.90$, $p < 0.001$. The average educational level (number of school years) of participants was 15.69 (SD = 1.45) years. Women and men did not differ on educational level. Majority of the sample was single (n = 403, 78.10%), 101 persons were married (19.60%) and the remaining (n = 12, 2.30%) were either divorced or widowed. A total of 298 participants (58.40%) were working, 151 (29.60%) were student and 61 (8.0%) were either not working or looking for a job. Majority (n = 196, 70.0%) of those who were working were psychologists or psychological counselors and 84 of participants (30.0%) belonged to other professions.

Measures

Data were collected by means of a web-based survey questionnaire which included the following sections:

Sociodemographics

In this section, participants were asked about their gender, age, height, weight, educational attainment, civil status, work status, profession, field of study etc.

Sexual Behaviors

Five questions were asked about different aspects of sexuality. They were:

1. Have you ever had sexual intercourse which resulted in orgasm?
2. Have you had sexual intercourse during the past 12-months?
3. Do you have sexual fantasies?
4. Do you look at pornographic magazines or watch pornographic films?
5. Do you masturbate?

Sexual Orientation

Sexual orientation was measured by Kinsey Scale[34] which measures sexual orientation on a 7-point Likert scale. Responses ranged from 0 (only opposite sex persons) to 6 (only persons from my own sex) with 3 as being the midpoint (opposite sex and persons from my own sex equal). Participants were asked to respond to six Kinsey Scales. Five of the Kinsey scales were given after sexual behavior questions. The exact wordings of the six Kinsey scales were as follows:

1. What would you say about the gender of persons with whom you have had sexual intercourse?
2. What would you say about the gender of persons with whom you have had sexual intercourse during the past 12-months?
3. What would you say about the gender of persons for whom you have had sexual fantasies?
4. What would you say about the gender of persons for whom you are sexually attracted to while you look at pornographic magazines or watch pornographic films?
5. What would you say about the gender of persons you imagine when you masturbate?
6. What would you say about the gender of persons for whom you are sexually attracted to?

Participants were dichotomized into exclusive heterosexuals (only opposite persons) and nonexclusive homosexuals (some degree of same-sex sexual attractions and behaviors) depending on the basis of their responses to the Kinsey scales.

Finally, a single item was used to elicit responses about participants' self-identified sexual orientation: How would consider yourself? The response alternatives were:

1. I consider myself as someone who only feels sexually attracted to the opposite sex (heterosexual).
2. I consider myself as someone who only feels sexually attracted to persons from my own sex (homosexual).
3. I consider myself as someone who feels sexually attracted to both sexes (bisexual).

Frequency of sexual intercourse

A single item measured the frequency of sexual intercourse in a month: "How many times do you have sexual intercourse in a month?"

Age of first sexual intercourse

Participants' age of first sexual intercourse was measured with the item: "How old were you when you had sexual intercourse for the first time?"

Age of first sexual arousal

A single item was used to measure the age of first sexual arousal: "How old were you when you experienced sexual desire for the first time?"

Age of Puberty

Five-item Puberty Questionnaire (PQ) from Ostovich and Sabini[35] were translated into Turkish by the author and checked by two other bilingual professionals. Men were also asked about the age of voice deepening. Six items tapping age of puberty related events were as follows:

1. How old were you when you first noticed armpit hair growth?
2. How old were you when you first noticed pubic hair growth?
3. How old were you when you first noticed breast development?
4. How old were you when you had your first period?
5. How old were you when you first noticed facial hair growth?
6. How old were you when you first noticed deepening of your voice?

Women responded to the first four questions. Men responded the first two and the fifth and sixth questions. The internal consistency coefficient (Cronbach's alpha) was 0.88 for women and it was 0.75 for men. An age of puberty score was computed by totaling the four items divided by the number of items for each participant. Thus, while higher values indicate late puberty, lower values indicate earlier age of puberty.

Sex drive

The four-item Sex Drive Questionnaire (SDQ) from Ostovich and Sabini[35] was translated into Turkish and checked by two other bilingual professionals. The SDQ measures the degree of one's sex drive without any romantic or sexual partner. SDQ items are:

1. How often do you experience sexual desire?
2. How often do you orgasm in the average month?
3. How often do you masturbate in the average month?
4. How would you compare your level of sex drive with that of the average person of your gender and age?

Participants rated the SDQ items on a 7-point Likert scale ranging from 0 (never) to 6 (several times a day) for the first three items and from 0 (very much lower) to 6 (very much greater) for the fourth item. Coefficient alpha for the Turkish SDQ was 0.72. A principle component analysis showed that the Turkish SDQ was made up of a single factor accounting for %55.20 of the total variance. A SDQ score was computed by summing the four items divided by the number of items. Thus, SDQ scores range from 0 to 6, higher scores indicating greater sex drive.

Handedness

To measure the degree of hand preference participants were asked "While doing something (i.e. writing, holding etc.) which hand do you mostly use? Participants rated this question on a 7-point Likert scale ranging from 0 (only right hand) to 6 (only left hand), 3 being the midpoint (use right and left hand equally).

Childhood Sexual Abuse (CSA)

Five CSA items from the Childhood Trauma Questionnaire (CTQ)[36] were used to assess participants' recollections of childhood sexual abuse. The Turkish CTQ was found to have adequate psychometric properties.[37] The response alternatives for CTQ items were "Yes=1" or "No=0." The alpha coefficient for CTQ in this sample was 0.66. To obtain a CSA score, the responses to these five questions were totaled. Thus, CSA scores ranged from 0 to 5, with higher scores representing more instances of childhood sexual abuse.

Childhood Gender Nonconformity (CGN)

Nine items were devised by the author to determine the levels of childhood gender atypicality. Participants rated items on 5-point Likert scales ranging from 1 (not at all true of me) to 5 (completely true of me). A varimax rotated principle component analysis yielded three factors with eigenvalues greater than 1 that accounted for 72.04% of the total variance. The first factor (Eigenvalue = 2.77; % variance = 30.77; a = 0.86) was labeled as childhood girl typical behaviors (4 items: When I was a child, I used to like playing house,; When I was a child, I used to

like playing with kitchen utensils; When I was a child, I used to like playing with dolls; When I was a child, I used to like knitting). The second factor (Eigenvalue = 2.26; % variance = 25.07; a = 0.81) was labeled as childhood boy typical behaviors (3 items: When I was a child, I used to like playing with cars; When I was a child, I used to like playing war games; When I was a child, I used to like playing football). The third factor (Eigenvalue = 1.46; % variance = 16.20; a = 0.62) was labeled as childhood cross-gender behaviors (2 items: When I was a child, I used to like to be someone from the opposite sex; When I was a child, I used to like wearing opposite sex clothes). Factor scores were computed by summing the responses to items under a factor divided by number of items. Thus, factor scores range from 1 to 5, with higher scores indicating higher factor content.

Time Spent with Parents during Childhood

Two questions asked participants the percentage of time they spent during childhood with their mothers and fathers. They were instructed that time spent with both parents should have equaled to 100.

Perceived similarity to Parents

Two questions (To what extent are you similar to your mother/father?) were asked to participants. Participants responded to these questions on a 7-point scale ranging from 1 (resemble not at all) to 7 (resemble too much).

Procedure

Internet based survey method was used to collect the data. A questionnaire banner was displayed on author's personal web site (www.mehmeteskin.com, not effective any more). The study was announced in electronic forums where psychologists, psychological counselors and social workers are active members. The data were collected between 11.28.2006 and 03.19.2009. The survey banner invited visitors to the web site for participation. When a visitor clicked on the survey banner an informed consent page appeared. The text explained the purpose, content and voluntary nature of the study. The consent form told potential participants that they should be 18 years old or older to participate. Participants willing to participate clicked on "I am 18 years old or older and accept to participate in the study" button. When participants finished answering the questions they are requested to click on a "finished and send" button. Filled in questionnaires were sent to author's private e-mail address. Data were entered into an SPSS file for statistical analyses.

Table 1. Numbers and percentages of sexual behaviors.

	Total		Men		Women		χ^2	P=
	N	%	n	%	n	%		
Ever have had sexual intercourse	400	80.5	77	85.6	323	79.4	1.80	0.180
Sexual intercourse within the past 12-months	382	78.0	70	77.8	312	78.0	0.002	0.963
Have had sexual fantasies	452	91.9	90	96.8	362	90.7	3.963	0.055
Watches pornography	249	50.0	74	79.6	175	43.2	39.996	0.000
Masturbates	379	76.4	84	91.3	295	73.0	13.899	0.000

Parental Attachment (PA)

Parental attachment (PA) was assessed by the 12-items attachment to mother (PA-m) and the 12-items attachment to father (PA-f) scales.[38] The PA-m and PA-f scales were translated into Turkish and their psychometric properties were assessed and were found to hold highly adequate reliability and validity.[39] Participants rated the items on a 7-point Likert scale ranging from 1 (Never) to 7 (Allways). Cronbach's alpha coefficients in this sample were 0.80 for the PA-m and 0.86 for the PA-f scales. A PA-m and a PA-f score were computed by summing the 12 items divided by the number of items. Thus, the factor scores ranged from 1 to 7, with higher scores representing higher levels of perceived parental attachment.

Table 2. Numbers and percentages of nonexclusive homosexual behaviors, attractions and nonheterosexual sexual identity.

	Total		Men		Women		χ^2	P=
	N	%	n	%	n	%		
Nonexclusive homosexual behaviors								
Nonexclusive homosexual behavior lifetime	30	7.7	9	11.7	21	6.7	2.21	0.137
Nonexclusive homosexual behavior past 12-months	18	5.0	8	11.8	10	3.4	8.13	0.004
Total number of persons with nonexclusive homosexual behaviors	32	8.1	9	11.7	23	7.2	1.70	0.193
Nonexclusive homosexual attractions								
Nonexclusive homosexual attraction during fantasies	103	23.0	13	14.4	90	25.1	4.65	0.031
Nonexclusive homosexual attraction in pornography	117	48.0	9	12.2	108	63.5	54.51	0.000
Nonexclusive homosexual attraction during masturbation	81	22.8	11	14.1	70	25.2	4.25	0.039
Nonexclusive homosexual sexual desire	90	18.4	15	16.5	75	18.8	0.28	0.600
Total number of persons with nonexclusive homosexual attractions	175	35.4	16	17.4	159	39.6	16.07	0.000
Self-identified nonheterosexual sexual identity								
Homosexual	9	2.4	5	7.2	4	1.3		
Bisexual	20	5.4	3	4.3	17	5.6	8.49	0.014
Homosexual or bisexual	29	7.8	8	11.6	21	6.9	1.72	0.189

Table 3. Means and standard deviations of measures.

	Total		Women		Men		t	P=
	M	SD	M	SD	M	SD		
Biodemographic variables								
Height	167.31	7.25	165.28	5.88	176.33	5.72	16.61	0.000
Weight	61.72	12.99	58.29	10.40	76.92	12.50	15.17	0.000
Handedness	0.97	1.26	0.99	1.27	0.87	1.22	0.80	0.426
Sexual-developmental variables								
Frequency of sexual intercourse (in a month)	9.16	7.35	8.76	7.34	8.84	8.31	0.09	0.931
Age of first sexual intercourse	20.15	3.00	20.39	2.84	19.17	3.43	3.23	0.001
Age of first sexual arousal	14.12	2.52	14.48	2.70	12.53	2.25	7.12	0.000
Age of puberty	12.67	1.32	12.35	1.14	14.08	1.13	13.37	0.000
Sex drive	3.72	1.15	3.55	1.12	4.44	1.01	7.11	0.000
Childhood sexual abuse	0.70	1.06	0.75	1.09	0.52	0.88	1.92	0.056
Childhood gender nonconformity								
Boy typical behaviors	3.41	1.16	1.76	0.76	3.85	0.99	22.87	0.000
Girl typical behaviors	2.14	1.14	3.82	0.82	1.62	0.55	24.75	0.000
Cross-gender behaviors	1.34	0.62	1.39	0.66	1.12	0.37	3.90	0.000
Parental variables								
Time spent with mother	67.74	14.78	67.48	14.69	68.91	15.21	0.85	0.397
Time spent with father	32.62	15.04	32.80	14.90	31.83	15.70	0.57	0.571
Attachment to mother	5.04	1.11	5.03	1.16	5.10	0.86	0.55	0.581
Attachment to father	4.18	1.46	4.19	1.49	4.12	1.48	0.46	0.642
Perceived similarity to mother	4.51	1.44	4.57	1.42	4.25	1.51	1.96	0.051
Perceived similarity to father	4.44	1.53	4.45	1.53	4.40	1.54	0.26	0.798

Statistical Analysis

Varimax rotated factor analysis procedure was used to uncover the underlying dimensions of childhood gender related behaviors. Chi-square tests were used to investigate the differences between men and women in sexual and sexual orientation indices. T-tests were employed to compare the means of biodemographical, sexual-developmental, CSA, childhood gender typicality and parental variables. Point-biserial correlation coefficients were computed between biodemographical, sexual-developmental, CSA, childhood gender typicality, parental variables and nonexclusive homosexual behaviors, attractions and identity. Then, six (component: attraction, behavior, identity by gender: men and women) logistic regression analyses were performed to determine the independent predictors of same-sex sexual attractions, behaviors and identity in men and women. Variables having bivariate correlation coefficients with nonexclusive homosexual behaviors, attractions and identity at $p < 0.10$ significance level or above were entered into the logistic regression analyses.

RESULTS

Number and percentages of different aspects of sexuality are given in Table 1. As it is seen in the table majority of participants were sexually active. Men and women did not differ in having had sexual intercourse and sexual fantasies. But significantly more men than women indicated having used pornography and masturbated.

Number and percentages of nonexclusive homosexual behaviors, attractions, and nonheterosexual sexual identity are given in Table 2. As the table shows nonexclusive homosexual behaviors during the past 12-months were significantly more common in men than in women. The table shows that nonexclusive homosexual attractions were more common in women than in men but nonexclusive homosexual desires were equally frequent in women and men. Homosexual sexual identity was more common in men than in women but bisexual sexual identity was more common in women than in men. But the numbers of combined homosexual and bisexual sexual identities were equally common in men and women.

Means and standard deviations of measures are given in Table 3. Men were taller and heavier than women. Men have had earlier age of first sexual intercourse, have experienced earlier age of first sexual arousal and had greater sex drive than women but women reached puberty earlier than men. Compared to men, women recalled more instances of cross-gender behaviors.

The Table 4 displays the point-biserial correlation coefficients between nonexclusive homosexual sexual attractions, behavior and self-identification as homosexual or bisexual. As the Table shows, in men six variables had significant associations with nonexclusive same-sex sexual attractions and seven variables had statistically significant associations with both nonexclusive homosexual behavior and nonheterosexual sexual identity. In women, ten variables had significant associations with nonexclusive same-sex sexual attractions, four variables with nonexclusive homosexual behaviors and three variables with nonheterosexual sexual identity.

Results of the two logistic regression analyses performed on nonexclusive homosexual behaviors are presented in Table 5. As the table shows reporting fewer childhood boy typical behaviors, earlier age of first sexual intercourse and more childhood cross-gender behaviors were the independent predictors of nonexclusive homosexual behaviors in men. Greater instances of CSA and earlier age of first sexual intercourse were the independent predictors of nonexclusive homosexual behaviors in women.

Results of the two logistic regression analyses conducted on nonexclusive homosexual attractions are presented in Table 6. Reporting fewer childhood boy typical behaviors and earlier age of first sexual arousal were the independent predictors of nonexclusive homosexual

Table 4. Point-biserial correlation coefficients between independent and outcome variables according to participants' gender.

Variables	Men (n = 95)			Women (n = 422)		
	Attraction[a]	Behavior[a]	Identitiy[a]	Attraction[a]	Behavior[a]	Identitiy[a]
Biodemographic variables						
Height	– 0.08	0.04	– 0.15	0.02	0.06	0.08
Weight	– 0.21**	– 0.12	– 0.17	0.09*	0.05	0.05
Handedness	– 0.10	– 0.15	– 0.16	0.06	0.13**	0.03
Sexual-developmental variables						
Age of first sexual intercourse	– 0.16	– 0.34***	– 0.29**	– 0.11*	– 0.13**	– 0.12**
Age of first sexual arousal	– 0.27***	– 0.27***	– 0.22*	– 0.19***	– 0.07	– 0.04
Age of puberty	– 0.06	– 0.07	– 0.04	0.04	– 0.04	– 0.10
Sex drive	0.21*	0.20*	0.28**	0.24***	0.06	0.06
Childhood sexual abuse	0.28***	0.29***	0.25**	0.12**	0.11*	0.03
Childhood gender typicality						
Boy typical behaviors	– 0.48***	– 0.54***	– 0.63***	0.14***	0.01	0.14**
Girl typical behaviors	0.11	0.22**	0.26**	– 0.08*	– 0.11*	– 0.11**
Cross-gender behaviors	0.27***	0.43***	0.42***	0.14***	0.02	0.09
Parental variables						
Time spent with mother	– 0.03	– 0.05	– 0.11	0.05	0.02	– 0.01
Time spent with father	– 0.01	0.04	0.10	– 0.04	– 0.03	0.01
Attachment to mother	– 0.16	– 0.06	– 0.15	– 0.11**	– 0.06	0.07
Attachment to father	– 0.16	– 0.11	– 0.11	– 0.10**	– 0.02	– 0.05
Perceived similarity to mother	– 0.07	0.13	– 0.00	– 0.02	0.04	0.03
Perceived similarity to father	– 0.14	– 0.06	– 0.05	0.04	– 0.03	– 0.01

[a] Nonexclusive homosexual attractions, behaviors, and nonheterosexual sexual identity

* p < 0.10; ** p < 0.05; *** p < 0.01

attractions in men. Higher levels of sex drive and greater instances CSA were the independent predictors of nonexclusive homosexual attractions in women.

Table 5. Predictors of nonexclusive homosexual behaviors.

Predictor Variables	Nonexclusive homosexual behaviors = 1 Exclusive heterosexual behaviors = 0						
	B	SE	Wald	DF	P=	e^B	95% CI
Men							
Constant	–2.01	0.36	31.97	1	0.000		
Childhood boy typical behaviors	–1.61	0.44	13.34	1	0.000	0.20	0.09–0.47
Age of first sexual intercourse	–0.58	0.24	5.66	1	0.017	0.56	0.35–0.90
Childhood cross-gender behaviors	4.44	1.96	5.11	1	0.014	84.37	1.80–3953.44
Women							
Constant	–2.54	0.22	137.28	1	0.000		
Childhood sexual abuse	0.38	0.17	4.93	1	0.026	1.46	1.05–2.04
Age of first sexual intercourse	–0.18	0.09	4.55	1	0.033	0.83	0.70–0.99

Results of the two logistic regression analyses performed on nonheterosexual sexual identity are presented in Table 7. The table shows that reporting fewer childhood boy typical behaviors and earlier age of first sexual arousal were the independent predictors of nonheterosexual sexual identity in men. Reporting greater number of childhood boy typical behaviors in women was the only independent predictor of nonheterosexual sexual identity in women.

DISCUSSION

The present study reports the results from a web-based survey with 517 Turkish women and men. The results indicate that an overwhelming majority of participants are sexually active. The results show that the differences between men and women in aspects of sexuality are in expected directions. Men and women were similar in terms of sexual behaviors but significantly more men than women reported using pornographic material and masturbating (see Table 1). Men reported being heavier and taller than women. They also reported having had earlier age of sexual debut, sexual arousal and greater sex drive than women but women reported having reached puberty earlier and more cross-gender behaviors than men.

It seems that the rates of nonexclusive same-sex sexual behaviors and attractions observed in this sample show variations according to behavioral domain and temporal frame. Significantly more men than women reported having engaged in same-sex sexual behaviors during the past 12-months but significantly more women than men reported having had same-sex sexual attractions while having sexual fantasies, watching pornography, and masturbating. The overall numbers of nonexclusive homosexual behaviors in men and women were similar but significantly more women than men reported having nonexclusive same-sex sexual attractions across behavioral domains (see Table 2). In a previous study with 1262 Turkish university students Eskin et al.[24] documented that 7% of the sample reported lifetime or current same-sex sexual attractions, 5% behaviors and 2% homosexual or bisexual sexual identity. Corresponding percentages (35.4%, 8.1% and 7.8%) in the current sample were higher than the ones reported in the previous study. This has to do with two methodological differences between the two studies. In the first, higher percentages in this study than the previous one may be due to self-selection bias. That is, participants may have perceived sexual-orientation questions in this study relevant to their personal experiences and hence have been more

inclined to participate. In the second, acknowledging private and socially disapproved personal experiences and features may have been perceived easier in an online survey than in paper and pencil survey done in the classroom setting.

Table 6. Predictors of nonexclusive homosexual attractions.

Predictor Variables	Nonexclusive homosexual attractions = 1 Exclusive heterosexual attractions = 0						
	B	SE	Wald	DF	P=	e^B	95% CI
Men							
Constant	–1.56	0.28	32.09	1	0.000		
Childhood boy typical behaviors	–1.24	0.32	15.14	1	0.000	0.29	0.16–0.54
Age of first sexual arousal	–0.34	0.14	5.84	1	0.016	0.71	0.54–0.94
Women							
Constant	–0.34	0.12	8.59	1	0.003		
Sex drive	0.55	0.13	19.24	1	0.000	1.74	1.36–2.22
Childhood sexual abuse	0.29	0.11	6.63	1	0.010	1.27	1.07–1.66

Previous research has identified a number of factors associated with same-sex sexual orientation. However, the bulk of research has done so on a bivariate basis. Results from this study show that sexual-developmental variables, CSA and childhood gender atypicality were related to nonexclusive same-sex sexual attractions, behaviors and identity. Parental and biodemographic variables were rarely related to nonexclusive same-sex sexual attractions, behaviors and identity. As it was pointed out before some of the bivariate associations may be spurious. That is, the relationship between a given variable and same-sex sexual orientation might be due the influence of another variable. For instance, the relationship between CSA and same-sex sexual orientation might be due to childhood gender atypicality and hence when the effect of later variable is taken into account the association might disappear. Therefore, in order to better ascertain true/real relationships one has to make use of multivariate statistical techniques.

The results from the logistic regression analyses in the present study (Tables 5, 6 and 7) show both gender universal and gender specific correlates of same-sex sexual orientation. When other variables were controlled for, an earlier age of sexual debut was associated with nonexclusive same-sex sexual behaviors in both men and women. Earlier age of first sexual arousal was associated with nonexclusive same-sex attractions and nonheterosexual sexual identity in men. In line with findings from earlier research, [6,40] the bivariate associations of age of first sexual intercourse and age of first sexual arousal to nonexclusive same-sex sexual attractions, behavior and identity (see Table 4) suggest that persons with nonexclusive same-sex sexual orientation show earlier sexual maturation than those with exclusive heterosexual sexual orientation and more so in men than in women. For Jenkins[41] increased sexual urges in early maturers when surrounded by same-sex peers may give rise to sexual or intimate attractions towards persons with one's own gender. Although some previous work[42-43] found earlier age of puberty to be associated with sexual orientation in men, it was not found to be related to sexual orientation in the present study. One can argue that age of both sexual arousal and first sexual intercourse are too proximal to sexual orientation and probably the two parameters overlap with some aspects of same-sex sexual orientation.

Previous research has established a robust relationship between childhood gender nonconformity and homosexual sexual orientation.[12,14-18, 44,45] The findings from this study support and extend findings from previous studies. According to the findings from the current study, reporting fewer childhood boy typical behaviors were consistently related to homosexual behaviors, attractions and identity in men but only to identity in women. A unique contribution of the findings from this study is that it is not the recollections of childhood girl typical behaviors but recollecting fewer childhood boy typical behaviors that is related to same-sex sexual attractions, behavior and identity in men. As was expected, the likelihood of self-identifying as homosexual or bisexual in women recollecting more childhood boy typical behaviors was greater than in women recollecting fewer numbers of childhood boy typical behaviors.

A number of empirical work has suggested that childhood abuse (sexual or nonsexual) might be associated with same-sex sexual orientation[24,27,46-49] but childhood gender nonconformity, gender of the victim and the prevailing sociocultural gender norms may blur this association. For Roberts et al.[25] childhood gender nonconformity is a risk indicator for childhood abuse (sexual or nonsexual) but for Rind[28] abuse (sexual or nonsexual) is a consequence of homosexual sexual orientation rather than a cause. Having these methodological caveats in mind the present study analyzed the relationship between CSA and same-sex sexual orientation in men and women separately with multivariate statistical technique within the Turkish culture where gender norms are segregated and homosexuality is not a welcome phenomenon. The results showed that CSA was positively related to same-sex sexual behaviors and attractions in only women. Note that CSA had significant positive bivariate associations with same-sex sexual behavior, attractions and identity in men as well. This might be an indication of gender differences in sexuality where women's sexuality is characterized by greater plasticity and contextualization.[50-52]

Table 7. Predictors of nonheterosexual sexual identity.

Predictor Variables	Homosexual or bisexual identity= 1 Heterosexual identity = 0						
	B	SE	Wald	DF	P=	e^B	95% CI
Men							
Constant	– 1.81	0.38	22.59	1	0.000		
Childhood boy typical behaviors	– 2.05	0.61	11.25	1	0.001	0.13	0.04 – 0.43
Age of first sexual arousal	– 0.46	0.24	3.79	1	0.051	0.63	0.40 – 1.00
Women							
Constant	– 2.50	0.25	104.26	1	0.000		
Childhood boy typical behaviors	0.53	0.25	4.30	1	0.038	1.70	1.03 – 2.79

The results from this web-based survey provide valuable insights into the scope of and factors associated with same-sex sexual behaviors, attractions and identity in the Turkish cultural context. Somewhat higher percentages of nonexclusive homosexual behaviors, attractions and identity compared to the rates reported in a previous study were observed in this study. The patterns of associated features with same-sex sexual behaviors, attractions and identity suggest

biodevelopmental variables are more closely related to homosexual behavior, attractions and identity in men compared to women. However, a number of methodological limitations should be kept in mind when generalizing current findings. First, the method of recruiting participants in this study may have created a bias. People who found the survey interesting or relevant to their personal experiences (self-selection bias) might have filled in the survey which may have resulted in higher percentages of same sex sexual behaviors, attractions and identity in this study. Second, the number of men was small. This has to do with channels through which the survey was announced. The survey was announced through channels mostly psychologists and psychological counselors (overwhelmingly women) are active members which resulted in mostly participants from these professions. Third, some of the instruments (e.g. PQ and SDQ) are used for the first time in Turkish in this study. Although adequate reliability and factorial validity were obtained in the study, further research is required for a better assessment of their reliability and validity. Finally, since the present investigation is a cross-sectional survey the results should not be interpreted in a causal manner.

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