



Sexual Stimulants: Prevalence and Associated Factors Amongst Married Women in Sokoto Metropolis, Sokoto State, Nigeria

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Authors' contributions

This work was carried out in collaboration between all authors. Authors UMA and MOO gave the study concept and design, and drafted the manuscript. Authors MMB, MTU, EUY and AA, gave the study concept and design, and performed data analysis Authors BHA, SMA and DTS performed data collection, analysis and interpretation. All authors read and approved the final manuscript.

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ABSTRACT

Aim: This study was aimed at assessing the prevalence and factors associated with the use of sexual stimulants (aphrodisiacs) among married women in Sokoto metropolis, Sokoto state, Nigeria.

Methodology: A cross-sectional study was conducted among 215 married women in Sokoto metropolis selected by multistage sampling technique. A set of pre-tested, semi-structured interviewer- administered questionnaire was used to collect data on the research variables. Data were analyzed using IBM® SPSS version 20 statistical package.

Results: A total of 215 married women were interviewed, out of which 209 were aware of sexual stimulants. Of the 209 respondents who were aware of sexual stimulants, majority 183 (85.0%) reported using one form of sexual stimulants or the other and up to 135 (73.8%) of those who used sexual stimulants were from monogamous setting, their main source of information concerning

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sexual stimulants was from family relatives 101 (55.2%). A large proportion of the respondents 127 (69.4%) used it to satisfy their spouses while majority (84.3%) of them reported increased sexual pleasure/satisfaction by them and their husbands. Complications developed by the respondents while using sexual stimulants include: vaginal itching 8(30.8%), vaginal discharge 5(19.2%), dryness of the vagina and irregular menstrual period 2 (7.7%) each, vaginal bruises, lower abdominal pain and painful intercourse 3 (11.5%) each.

Conclusion: The study revealed a high prevalence of use of sexual stimulants among the respondents, with the substances being obtained from various sources and used for different reasons. A sizeable number of them opined that they used the substances to enhance their sexual satisfaction and that of their husbands. Since the pharmacological compositions of these substances have not been ascertained, there is need for community education on the health risks associated with the use of sexual stimulants as some of them may have adverse effects on the organs of the body.

Keywords: Prevalence; sexual stimulants; married women; Sokoto metropolis.

1. INTRODUCTION

The word “Aphrodisiac” is derived from “Aphrodite” the Greek goddess of love. By definition aphrodisiacs are substances, which stimulate sexual desire (Greek-Aphrodisiakos sexual) and in local parlance are called sexual stimulants [1,2].

It is contained in many drugs, foods, drinks and beverages that have reputation of making sexual intercourse more attainable or pleasurable [3,4]. The use of plant or plant-based products to stimulate sexual desire and to enhance performance and enjoyment is almost as old as the human race itself [4].

There is a rich history in all cultures of using substances derived from plants and animals, as well as synthetic materials, to influence and change sexual experiences, men and women alike have continued to use these sexual stimulants regardless of their composition and any scientific basis of truly improving sexual satisfaction [5,6]. Many of these natural substances have historically been known as aphrodisiacs and Yohimbine in Africa and Europe respectively [6].

The sexual stimulants (Aphrodisiacs) can be categorized according to their mode of action into three groups namely: Substances that increase libido (i.e., sexual desire, arousal), substances that increase sexual potency (i.e., effectiveness of erection) and substances that increase sexual pleasure [7].

The World Health Organization (WHO) estimates that in many developed countries, 70 to 80% of the population had used some form of alternative

or complementary medicine including sexual stimulants, homeopathic, naturopathy, traditional Oriental and Native American Indian medicines [8].

There are various factors that influence the use of sexual enhancers or aphrodisiacs in humans which could be social, biological and psychological [9]. A lot of these substances are derived from preparations such as herbs, leaves, honey or soup ingredients including okra (*Abelmoschus esculentus*), and dried baobab leaves. Some animal parts are also used as stimulants [10]. The traditional preparations have different names in different locations. Some are called Eye to eye, Keep on following her, A house, A car, Hereditary access, Dangerous three, Senseless preparation, etc. [10]. Almost every culture has used various substances, usually herbal in origin in an attempt to intensify sexual desire, performance and cure impotence. Despite all the unsubstantiated claims, people continued to make use of these sexual stimulants (aphrodisiacs) and women in northern Nigeria are no exceptions [10]. There are various combinations which include both traditional (which are common) and more Modern ones. They are used by both men and women to increase libido and vaginal lubrication, and these preparations can be taken orally, inserted into the vagina, used topically, or as a combination [11].

The mechanism of action of these commonly used traditional preparations is yet to be known however, drugs affecting sexuality can either act on the central nervous system and/or the peripheral nervous system. Drugs affecting the brain and presumably sex centers are generally attributed with an increase or decrease in sexual

arousal [12]. Drugs that affect peripheral nerves will not affect arousal directly but may affect sexual functions. In some cases drug actions are direct and involve chemical alteration of the neurons which govern sexual arousal or functions. Alternatively some drugs may act indirectly by altering blood flow to the genitalia [12].

Generally it was found that women experience significantly more sexual dysfunction than men [13]. In addition, women may find it difficult to ask for professional help in some cultural settings, and such women may purchase sexual stimulants from non-orthodox sources following the advice of their friends or relatives, which may subsequently result in complications [14-15].

This may likely be the case in conservative societies like northern Nigeria, where issues relating to sexuality are governed by religion and culture. They are hardly discussed openly and most often discussion on sexuality is considered a taboo. However, in a culture that accepts polygamy, women do what they think is right to keep their spouses to themselves so as to remain in monogamous relationship. Where their efforts in maintaining the monogamous family relationship fails, they ensure that they gain the husband's attention and favours within the polygamous family setting, and sexual activity is one strong means employed by most of these women to achieve their desires through the use of herbal substances to enhance sexual performance [16]. This study is therefore aimed at assessing the prevalence and factors associated with the use of sexual stimulants (aphrodisiacs) among married women in Sokoto metropolis, Sokoto state, Nigeria.

2. MATERIALS AND METHODS

This cross-sectional study was carried out among married women in Sokoto metropolis, Sokoto state, Nigeria. Using the Cochran formula for calculating the sample size for cross-sectional studies [17], a 53.9% prevalence of aphrodisiacs use among women from a previous study [10], a precision level of 5%, and an anticipated 95% response rate, a total of 215 respondents were recruited into the study.

The eligible participants were selected by multi-stage sampling technique. Stage 1: one Local Government Area (LGA) out of five Local Government Areas in Sokoto metropolis was selected using simple random sampling

technique by balloting (Sokoto North LGA was selected). Stage 2: out of the eleven wards in the selected LGA, 3 were selected by simple random sampling technique using balloting option. Stage 3: Three settlements were selected from each of the selected ward by simple random sampling using balloting option. Proportionate allocation was done (in direct proportion to the number of eligible study subjects) in the selected settlements

Stage 4: house numbering was done and using systematic sampling technique, a one in three houses was selected and eligible respondents were enrolled into the study. A semi-structured, interviewer-administered questionnaire was developed and used to obtain information on respondents' socio-demographic characteristics, use and types of sexual stimulants, and factors associated with the use of sexual stimulants. The questionnaire was reviewed by senior researchers in the Department of Community Health of the hospital to ascertain content validity. It was then pretested on 11 purposively sampled married women in Gagi ward, Sokoto-South LGA of Sokoto State, Nigeria. Some questions were rephrased for clarity based on the observations made during the pretesting. Fourth year level medical students and two medical records staff assisted in questionnaire administration after pre-training on conduct of survey research, the study objectives, and questionnaire administration.

2.1 Statistical Analysis

Data collected were cleaned, entered into and analyzed using the IBM® SPSS version 20 statistical package. Frequency runs were done for further editing and cleansing of the e-data. Frequency distribution tables were constructed; and cross tabulations were done to examine relationship between categorical variables. Chi-square and Fisher's exact tests were used to test for relationship between categorical variables. Level of statistical significance was set at $p \leq 0.05$.

3. RESULTS

3.1 Socio-Demographic Characteristics of the Respondents

The mean age of the respondents was 29.86 ± 10.8 years, most 102 (47.4%) of them were between 16-25 years, and majority, were Muslims 214 (99.5%) and Hausas 187 (87.0%). Almost half, 102 (47.4%) of the respondents had

Qur'anic education followed by Secondary education 69 (32.1%) while Primary and tertiary education constituted 20 (9.3%) and 15 (7.0%) respectively. Up to 77 (36.0) of the respondents were full time house wives while civil servants constituted the lowest proportion 4 (1.8%). Most of the respondents were from monogamous setting 157 (73.0%) and a large proportion 124 (47.7%) had between 1-4 children followed by those with ≥ 5 number of children 70 (32.5%) whereas those with no children constituted 21 (9.8%), (as shown in Table 1).

3.2 Respondents' Awareness and Source (s) of Information on Sexual Stimulants

Majority of the respondents 209 (97.2%) were aware of sexual stimulants and Source of information was mostly from family /relatives 132(63.2%) while only 1(0.5%) had mother in-law as the source of information concerning sexual stimulants (as shown in Table 2).

3.3 Prevalence of use of Sexual Stimulants among the Respondents

Up to 183 (85%) of the respondents were using sexual stimulants while 15% of them were not. (As shown in Fig. 1).

3.4 Respondents' Sources/ Places of Purchase of Sexual Stimulants and Effects of use of Sexual Stimulants

Majority of the respondents 101(55.2%) mentioned family/ relatives as the source of supply for their sexual stimulants followed by friends 58(31.7%) while only 3(1.7%) had theirs through mother-in law. A large proportion of the respondents' husbands 122(66.7%) were aware

that their wives used sexual stimulants and most of the respondents' husbands 108 (88.5%) were in support of their wives using sexual stimulants whereas 91 (84.3%) of the respondents admitted there was increased sexual pleasure/satisfaction by their husbands following their use of the substances (as shown in Table 3).

3.5 Forms of Sexual Stimulants used by the Respondents

Majority of the respondents 95(51.9%) used oral sexual stimulants followed by combined oral and vaginal "inserts" 60(32.8%), while only 22(12.1%) used vaginal insertions and 6(3.2%) used topical. A greater proportion of the women stated that their choice of type of sexual stimulants was as a result of fewer side effects 95(51.9%), others stated more urge for sex 74(40.4%) while some stated cheapness 5(2.7%) and some linked the choice easy availability 9(4.9%). Majority of the respondents 127(69.4%) used sexual stimulants in order to enhance sexual satisfaction and pleasure of their husbands, some, 44(24.0%) used it to maintain marital harmony and obtain some form of favour from the husband while 12 (6.6%) used it in order to keep their husbands to themselves (as shown in Table 4).

3.6 Complications Developed by the Respondents During use of Sexual Stimulants

A total of 26 (14.2%) of the respondents agreed to have developed complications following use of sexual stimulants. The commonest complications developed among the respondents include: vaginal itching 8(30.8%), vaginal discharge 5

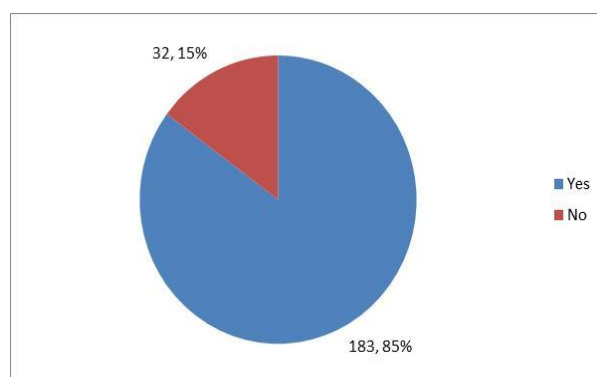


Fig. 1. Prevalence of use of sexual stimulants among the respondents

Table 1. Socio-demographic characteristics of the respondents

Variables	Frequency (n=215)	Percentage (%)
Age		
16 – 25	102	47.4
26 – 35	75	34.9
36 – 45	18	8.4
> 45	20	9.3
Mean = 29.86 ± 10.8		
Religion		
Islam	214	99.5
Christianity	1	0.5
Tribe		
Hausa	187	87.0
Yoruba	3	1.4
Igbo	1	0.4
Others	24	11.2
Level of education		
None	9	4.2
Qur'anic only	102	47.4
Primary	20	9.3
Secondary	69	32.1
Tertiary	15	7.0
Occupation		
Full housewife	77	36.0
Business	74	34.4
Civil servant	4	1.8
Others	60	28.0
Family setting		
Monogamous	157	73.0
Polygamous	58	27.0
Parity		
0	21	9.8
1-4	124	57.7
≥ 5	70	32.5

Table 2. Respondents' awareness and source (s) of information

Variable	Frequency	Percentage (%)
Ever heard of sexual stimulants (n= 215)		
Yes	209	97.2
No	6	2.8
Source of information of sexual stimulants (n = 209)		
Husband	13	6.2
Friends	58	27.8
Family /Relatives	132	63.2
Mother-in law	1	0.5
Others	5	2.4

(19.2%), vaginal bruises 3 (11.5%), lower abdominal pain 3 (11.5%) and irregular menstrual period 2(7.7%) while dryness of the vagina and painful intercourse each has 2(7.7%) (Table 5).

Table 3. Respondents' sources/ places of purchase of sexual stimulant and effects of use of sexual stimulants

Variable	Frequency	Percentage (%)
Source/ place of purchase of sexual stimulant (n=183)		
Husband	13	7.1
Friends	58	31.7
Family /Relatives	78	42.6
Mother-in law	3	1.7
Vendors/ Chemist	20	10.9
Health worker	11	6.0
Husband aware of the use of sexual stimulants (n=183)		
Yes	122	66.7
No	61	33.3
Husband supported the use of sexual stimulants (n=122)		
Yes	108	88.5
No	14	11.5
Husband experienced Increased sexual pleasure/satisfaction (n=108)		
Yes	91	84.3
No	17	15.7

Table 4. Forms of sexual stimulants used by the respondents

Forms of sexual stimulants	Frequency (n=183)	Percentage (%)
Oral stimulants	95	51.9
Vaginal inserts	22	12.1
Oral and vaginal insertion	60	32.8
Topical	6	3.2
Reasons for Choice of the type of sexual stimulants (n=183)		
Gives more urge for sex	74	40.4
Cheaper	5	2.7
Easily available	9	4.9
It has fewer/no side effect	95	51.9
Reasons for using sexual stimulants (n=183)		
Increase sexual satisfaction/ Pleasure	91	49.7
To keep my husband to myself only	48	26.3
Marital harmony and favour from husband	44	24.0

Table 5. Complications developed by the respondents during use of sexual stimulants

Variables	Frequency (n = 183)	Percentage (%)
Ever developed complications While using sexual stimulants		
Yes	26	14.2
No	157	85.8
Complications developed during use of sexual stimulants (n = 26)		
Vaginal bruises	3	11.5
Vaginal itching	8	30.8
Vaginal discharge	5	19.2
Dryness of the vagina	2	7.7
Painful sexual intercourse	3	11.5
Lower abdominal pain	3	11.5
Irregular menses	2	7.7

3.7 Factors Associated with use of Sexual Stimulants among the Respondents

Whereas there was no association between family setting ($P = 0.502$), Parity ($P = 0.120$) and educational level ($P = 0.854$) of the respondents with use of sexual stimulants, it was however, found to be associated with age and occupation of the respondents.

The proportion 155(84.7%) of the respondents aged ≤ 35 years who used sexual stimulants was statistically significantly higher ($P = .05$) compared to those aged > 35 years.

The proportion 124(67.8%) of the respondents who were employed who used sexual stimulants was statistically significantly higher compared to unemployed ($P = .05$), Table 6.

4. DISCUSSION

There is paucity of literature related to the current study, not much of this type of study was done in this part of the country, most probably due to conservative nature of our society that issues relating to sexuality are governed by culture and religion. Issues related to sexuality are hardly discussed openly and most often discussion on sexuality is considered as taboo especially among women. Most of the studies done on the use of sexual stimulants in this part of the country and world over were mainly among males. However this study explored more information on the prevalence and use of sexual stimulants among the married women in a LGA in Sokoto metropolis.

In this study, majority (84.7%) of the respondents were ≤ 35 years of age. This may not be unrelated to the fact that the stimulants are used mostly by young women aged 35 years and below since such women are still at the prime of their sexual activity and probably willing to take their sexual activities to another level. It may also be because in the cultural setting of the study area, as women advance in age, interest in sexual intercourse may give way to taking care of children. This is comparable to a study conducted in Kano state Nigeria where majority (78.9%) of the respondents were between ages of 16-30 years [10]. In a similar study, Garba et al., observed that more than half (60.9%) of the respondents were between the ages of 20 and 30 years [16]. The preponderance of Hausas and

Muslims respondents in this study is not surprising because the study was conducted in a predominantly Muslim and Hausa community; this is in agreement with the study done by Umar and Jibril in Kano state, Nigeria where majority of the respondents were Muslims and of the predominant Hausa ethnic group [5]. More than half of the respondents had between 1 to 4 children, and this compares well with the study from Kano State, Nigeria where majority of their respondents had between 1-4 children (52.5%) [5], it is also in consonance with a similar study carried out in Kano state which reported (46.9%) of the respondents with a parity of between 1-4 [10]. Findings from our study showed that close to half of the respondents 102 (47.4%) had Qur'anic education only with more than a third of them being full time housewives. This is not unrelated to the fact that in Sokoto State, the study area, the proportion of out of school children and illiteracy amongst women is very low [18]. In the study area, girls are usually married out at early ages in most cases before they attain their fifteenth birthday after attaining Qur'anic education and sometimes immediately after completion of secondary school education. The finding from our study is at variance to that of other studies where it was observed that most of their study subjects attained tertiary education [10,19]. In this study majority, (73.0%) of the respondents, were married into a monogamous family setting, this may be due to the fact that, the study was carried out in Sokoto metropolis which is cosmopolitan with so many educated civil servants who may not be too inclined to polygamy that is widely practiced in the rural areas of the state. The culture and religion of the study setting allows the men to practice polygamy. It is not surprising that majority of the study subjects are in monogamous marriages and would want to stop their husbands from practicing polygamy and believed that this can only be attained when their husbands achieved sexual satisfaction from them, hence their resort to the use of sexual stimulants in order to satisfy their husbands and keep their marriages. This finding is in keeping with the study conducted in Kano which reported that women in monogamous relationship were found to use sexual stimulants more compared to those in polygamous relationship [16]. Findings from this study showed a high prevalence of use of sexual stimulants as 85.0% of the study subjects have been using these substances since they were married. The prevalence of use of sexual stimulants observed in this study was higher compared to the findings from other studies

conducted in Kano state, Nigeria and in Ghana where (53.9%) and (52.6%) of the respondents respectively were reported to have used sexual stimulants. [10,20] A much lower prevalence was reported among the study participants in studies by Umar and Jibril (44.0%), Garba, et al (42.0%), and Sohil et al (26.0%) [5,16,19].

With regards to sources/ place of purchase of the sexual stimulants majority of the respondents obtained them through family members and others. This is in contrast to the findings from Kano where majority of their respondents obtained them through friends, [5]other study subjects however opined that they obtained the sexual stimulants through health workers which is in agreement with the finding from Kano, Nigeria [5].

About two-thirds of those who used sexual stimulants stated that their husbands were aware and, in most cases supported their use of the substances it was observed from our study that majority (84.3%) of the respondents reported increased sexual pleasure/satisfaction by their husbands. However, this finding is in contrast with the finding of a study by Garba, et al., which revealed that the stimulants did not meet the expectations of the users as up to (49%) of them expressed dissatisfaction on their sexual performance and satisfaction [16]. It is also in contrast with studies by Umar and Jibri., and

Abdullahi and Tukur., which reported only (25.3%) and (39.9%) respectively of the women who used the sexual stimulants stated increased sexual pleasure and satisfaction [5,10].

In this study a larger proportion of the respondents used oral sexual stimulants (51.9%), while those that used vaginal sexual stimulants and topical sexual stimulants were (12.1%) and 6 (3.2%) respectively. These findings are in keeping with a study in Kano State, Nigeria where majority of the respondents used oral sexual stimulants (50.9%) [10], while (11.8%) and (3.1%) of the respondent use vaginal stimulants and topical sexual stimulants respectively [10]. The finding of this study further showed that significant number of the respondents used both oral and vaginal sexual stimulants (32.8%), this finding is in disagreement with the study by Abdullahi and Tukur., were only (2.2%) of the respondents oral and vaginal sexual stimulants [10].

Some of the reasons stated by the respondents for choice of route of administration include, fewer side effects, more urge for sex, cheapness and easy availability of the sexual stimulants. Older women and sometimes men can be seen selling these substances in most nooks and crannies of the metropolis more so when their sales are not controlled by government regulatory agencies.

Table 6. Factors associated with use of sexual stimulants among the respondents

Variable	Use of sexual stimulants (n=209)		Test of significance
	Yes (n=183) Frequency (%)	No (n=26) Frequency (%)	
Age			
≤ 35	155(84.7)	16(61.5)	Fisher's Exact
> 35	28(15.3)	10(38.5)	<i>P = .015</i>
Level of education			
Formal	90(49.2)	11(42.3)	Fisher's Exact
Informal	93(50.8)	15(57.7)	<i>P = .0854</i>
Occupational status			
Employed	124(67.8)	12(46.2)	Fisher's Exact
Unemployed	59(32.2)	14(53.8)	<i>P = 0.006</i>
Family setting			
Monogamous	135(73.8)	19(73.1)	Fisher's Exact
Polygamous	48(26.2)	7(26.9)	<i>P = 0.502</i>
Parity			
≤ 3	110(60.1)	10(38.5)	Fisher's Exact
> 3	73(39.9)	16(61.5)	<i>P = 0.120</i>

The results of this study also revealed that, (24.0%) of the respondents use sexual stimulants in order to get favour from their husbands and 48 (26.3%) use it to prevent marital disharmony. These findings correlate with the results of studies by Abdullahi and Tukur, Umar and Jibril and Sohil, et al., where (20.2%), (27.8%) and (30.4%) of the respondents use sexual stimulants to get husband's favour and prevent marital disharmony respectively [5,10,19] Women who hawk these substances can always be heard telling their prospective women customers that the use of these substances could make their husbands buy cars houses and other valuables for them.

A few (14.2%) of the respondents reported some complications following use of the sexual stimulants including vaginal itching and vaginal discharge, the presence of these symptoms may not be unrelated to the fact that the substances could have been prepared through the most unhygienic processes. Similar findings were documented in a study in Kano state where (55%) and (16.5%) of their respondents were reported to have developed vaginal itching and vaginal discharge respectively after using the stimulants [10]. Up to (11.5%) and (7.7%) of the respondents developed lower abdominal pain and irregular menses respectively, these findings are in consonance with the findings in a study by Abdullahi and Tukur., where (11.4%) and (5.9%) of the respondents were observed to have developed lower abdominal pain and irregular menses respectively [10].

Furthermore, this study found a statistically significant association between ages of the respondents and the use of sexual stimulants with, the proportion of the respondents who used sexual stimulants higher among age group ≤ 35 ($P = .05$). This is closely similar to study in Kano state where highest users of sexual stimulant was reported among age group of ≤ 29 years ($p = 0.000$) [16]. In the same vein, the occupation of the respondents was statistically associated with the use of sexual stimulants as more of the women paid employments tended to use the stimulants ($P = .005$). This could be attributable to the fact that being in paid employments, they could afford the purchase of most of these substances compared to their unemployed counterparts.

5. CONCLUSION

The study documented high prevalence of sexual stimulants use among the respondents Although

some of the women reported complications including vaginal itching, vaginal discharge, painful sexual intercourse, lower abdominal pain and irregular menstruation, a sizeable number of them opined that they used the substances to enhance their sexual satisfaction and that of their husbands. Since the pharmacological composition of these substances have not been ascertained, there is need for community education on the associated health risks of using sexual stimulants as some of them may have adverse effects on the organs of the body.

6. LIMITATIONS OF THE STUDY

These include inadvertent hoarding of information by some participants because of the socio-cultural milieu of the study area where issues concerning sexuality shrouded in secrecy. This underscores the need for qualitative studies to unravel all hidden issues on sexuality especially the use of sexual stimulants by women in this environment and other parts of Nigeria.

CONSENT

As per international standard, patient's written consent has been collected and preserved by the authors.

ETHICAL APPROVAL

As per international or university standard, written approval of Ethics committee has been collected and preserved by the authors.

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COMPETING INTERESTS

Authors have declared that no competing interests exist.

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