

Sex related internet search trends in Spain

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ABSTRACT

Background: Studies report a crisis of desire and a decrease in sexual activity, particularly among young people, which could be attributed to the prevalence and immediacy of the internet sexual experiences and the consequent hypersexualization of society. Presently, there are no studies defining the extend of the use nor the type of the requested internet sex content.

Objective: To investigate the sexual concerns most asked to Google by residents in Spain and to establish the prevalence of explicit sexual content searches and the types of requested sexual content.

Methods: Google searches related to the keywords “SEX” or “FUCK” carried out in the territory of Spain over the past 12 months were assessed. The search terms and phrases associated with the investigated keywords were categorized into subgroups and the frequency of those searches was analyzed.

Results: Up to 10 million searches per month related to sex and pornography are recorded in Spain. Social networks and video games are used for virtual sexual experiences, and sex shops are frequently searched for, while searches for live sex experiences are in decline. Popular types of pornography include amateur and hard sex. Gay, anal, lesbian, and oral sex are the most common sexual practices searched for, and mature and plus-sized actors are favored among young and thin individuals. Popular locations for sexual activity include the beach, street, and bathroom, and sexual fantasies often feature prostitutes and teachers. A 2.2% of all sex related searches were dedicated to sexual education.

Conclusion: The close relationship between sex and technology highlights the increasing acceptance and normalization of e-sex and other sexual aids in society, and reveals the current change of sexual interests and behaviours of the Spanish population.

KEYWORDS

Sex, sexuality, pornography, Google searches, Spain, explicit sexual content.

Introduction

Over the last decade, studies on sexuality have reported a crisis of desire and a decrease in sexual activity, particularly among young individuals^[1]. This can be attributed to the immediacy of experiences that the contemporary generation lives through, which is largely influenced by the prevalence of the internet. The cyberspace has played a significant role in the hypersexualization of society, leading to a paradigm shift in sexuality. The internet was first introduced in Spain in 1984 in an exclusive academic context, but over the years, it has become an essential element of the daily life for most citizens, thanks to advances in technology and the accessibility of the internet without time or space limits^[2].

One of the advantages of the internet is the privacy it offers. Anonymity is crucial, particularly in cases of internet searches on topics that are often considered social taboos, such as sexuality. The big search engines have created a database with infinite potential by storing information related to the characteristics of the searches carried out by users. These data are an excellent source of information on human thoughts and behaviours. Until recently, research on human sexuality was limited to surveys, which oversimplified the matter and neglected the multiplicity of thought, in addition of being strongly influenced by the social desirability bias.

Seth Stephens Davidowitz, in his book “Everybody Lies,” notes

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that “The power of Google data is that people tell their search engine things they might not tell anyone else^[3].” (3) This aspect of data opens the door to an unexplored universe of knowledge regarding the most guarded desires of a human being.

The present study aimed to investigate the sexual concerns most asked to Google by residents of Spain, to shed light on the prevalence of explicit sexual content searches and the types of sexual content requested by internet users. Additionally, these data offer insight into the current sexual interests and behaviours of the Spanish population.

Methods

This study analyzes Google searches related to the keywords “SEX” or “FUCK” carried out in Spain over the past 12 months.

Sample

According to the INE (National Statistics Institute) the total population of Spain is 45,862,500, with immigrants making up 12.78% of the population (5,947,106 in total) [4]. Of the total population between the ages of 16 and 74, 85% regularly use the internet, with 35.8 million of them accessing it via their mobile phones [5]. Google is the most popular search engine used by 92.31% of consumers in Spain, both on desktop computers and mobile devices [6].

The sample for this study consisted of Google searches that included the keywords “SEX” or “FUCK” carried out in Spain, excluding searches associated with terms unrelated to sexuality, such as “sex academy,” “Lucia and sex,” or “sex on fire.” The exclusion criteria and the classification of the results in subgroups were based on consensus between authors and external referrals in case of discordance.

Instruments and methods

To collect data, we used the Keyword Magic Tool from the Semrush platform (Semrush Holdings Inc. Boston, Massachusetts, USA), which provided a quantitative assessment of searches for keywords and phrases associated with the investigated keywords. The data was expressed in volumes, which represent the total number of searches made through the search engines, expressed as a monthly average volume over the previous 12-month period (abbreviated as searches/month or s/m). Repeated searches for the same term by the same user were not counted as a new search. Throughout this procedure the study provides a systematic analysis of search terms related to sexuality in Spain, based on broad concordance with the keywords “SEX” or “FUCK,” and their conjugations or phrases in any order.

Results

The volume of searches associated with the keywords “SEX” or “FUCK” carried out through Google in the territory of Spain reaches almost 10 million per month (Table 1). Of them, around 70,000 searches per month are requests for sexual experiences through social networks (Phone, App, WhatsApp, Badoo, Skype, FaceBook, Tinder and others). In addition, about 50,000 people per month seek virtual sexual experiences through video games.

Sex shopping

Internet users in Spain search 240,000 times per month for shops dedicated to the sale of sexual, which is 10 times more than live sex events. The most popular Spanish cities associated with searches for sex shops or directly with the investigated keywords are: Madrid followed by Barcelona and Valencia (Table 2).

Sex practices

The most requested style of pornography is amateur or home recording summing up to 246,630 s/m. The residents of Spain mostly want to see hard, wild, extreme, brutal and fast sex (almost 150,000 s/m). Although not far behind there is the demand for soft, romantic, loving, hot, good, sensual, passionate, slow, sweet, pleasant and tender sex with almost 130,000 s/m, as well as casual sex (5,660 s/m) or kinky sex (1,030 s/m).

In Spain, the most requested pornography is with the representation of Spaniards or in the Spanish language (more than 3

million searches per year). The next most popular ethnic group is Latinos with 65,000 s/m, followed by Arabs (54,560 s/m). Table 3 illustrates the most popular pornography types.

The most popularly searched sexual practices are: gay sex (347,930 s/m), anal sex (218,790 s/m), lesbian sex (136,900 s/m) and oral sex (109,820 s/m). Within the realm of sexual education, oral sex garners the most queries regarding technique, with a total of 11,690 searches per month. Notably, there is a significant gender disparity, with oral sex in women submitting three times as many inquiries as oral sex in men.

Anal sex with the type of inquiries: how to do, practice, have, prepare, enjoy - adds up to more than 9,000 s/m. The request for sex in different configurations of more than 2 people (group, threesome, double penetration, sex roulette, triple penetration) is only slightly higher than the demand for sex images of couples (couple, marriage, missionary) – 74,140 s/m vs 57,470 s/m. Any form of sexual activities with inflatable dolls or sex toys are also (57,430 s/m). This could explain the previously mentioned high interest in businesses such as Sex Shops. It should be noted that adding all types of dominance - submission practices, this activity ranks fifth in popularity among the most requested sexual

Table 1 Global results and technology used to access sexual content.

Key words	Sex	Fuck
First search	7.181.050 s/m	2.995.180 s/m
Excluded terms	Sex academy, sex and the city, baby sex, sex and Lucia, sex in New York, cocktail, drink, sex on the beach, Sex Pistols, sex machine, James Brown, Masters of sex, sex on fire, sex in the city, ultrasound, sex bomb, sex appeal, and your mom too, sex fail sad movies	
Second search	6.934.870 s/m	2.995.180 s/m
Total	9.930.050 s/m	
Technology	Volume s/m	
Phone	18,850	
App	10,800	
WhatsApp	9,130	
Cellphone	8,530	
Badoo	6,180	
Skype	4,330	
Chat	2,940	
Chatroulette	2,720	
Android	2,340	
Facebook	1,740	
Social media	1,200	
Sex selfie	1,060	
Tinder	860	
Total social networks	70,680	
Virtual games	Volume s/m	
Virtual sex / Virtual sex games	44,440	
Minecraft	1,390	
Skyrim	1,110	
s/m: search per month		

Table 2 Sex shop and live sex searches.

Sex shop	Volume s/m
Total search volume for sex shop	239,650
The most popular cities for sex shop searches:	
Madrid	12,100
Barcelona	9,900
Valencia	5,400
Sevilla	5,400
Bilbao	2,900
Live sex	Volume s/m
Live sex	22,990
Cabin sex	1,070
s/m: search per month	

Table 3 Type of pornography.

Recording features	Volume s/m
POV (Point of View)	3,000
Hidden camera (real)	34,110
Amateur/amater/amatur/ameture sex	79,520
Homemade sex	130,000
TOTAL	246,630
Sex characteristics	Volume s/m
Hard/Rough/Hardcore/Strong	113,760
Gentle	42,920
Romantic/Romance	27,520
With love/Fuck with love/In love	16,760
Wild	13,900
Hot/Fiery	12,150
Extreme	9,580
Good	9,010
Brutal	7,880
Sensual	7,370
With passion/passionate	5,670
Casual	5,660
Slow	4,000
Sweet	1,800
Fast	1,540
Morbid	1,030
Pleasant	960
Tender	390
Nationalities and ethnicities	Volume s/m
Spanish fucking/Sex in Spanish	264,200
Latin American	65,000
Arab & Magrebi	54,560
Asia/Asian/Oriental	105,710
Gypsy	17,610
Russian	16,540
African	7,730
s/m: search per month	

Supplementary Table 1 Searches that included different types of dominance - submission sexual practices.

Dominance-submission	Volume s/m
Forced	12,380
Slave	9,700
Submission / Dominant	7,400
Tied up/ Bondage	6,120
BDSM (Bondage, Discipline, Domination, Submission, Sadism y Masochism)	3,750
Violent	3,630
Not consented	2,550
Harness	1,320
Abuse	870
Rape	660
Kidnapped	490
Humiliation	420
s/m: search per month	

practices on Internet (49,290 s/m) (Supplementary Table 1). Table 4 illustrates searches of specific sexual practices

The most sought-after locations for sexual activity are beach (73,660 s/m), street (20,590 s/m), pool (15,040 s/m) and outdoors (11,760 s/m) (Supplementary Table 2). On the other hand, the most popular spaces for sexual activity in a household are the bathroom (9,060 s/m), the kitchen (7,870 s/m) and the sofa (3,300 s/m). The demand for content that reflects sexual activity in public (“caught having sex”, “sex in public” or “in secret”) results are around 130,000 s/m, leaving apart sexual activity in public transportation such as buses, taxis, subways, trains, or planes that accumulate more than 35,000 s/m (Supplementary Table 2).

Physical and age characteristics (Table 5)

Contrary to the glorification of youth and thin bodies in popular media, in the privacy of their homes, residents of Spain search for pornography with mature actors twice as often as with young actors (535,190 vs 205,490 s/m), and following this trend, sexually explicit content with plus-sized actresses is requested 10 times more frequently than with slim actresses (99,030 vs 9,780 s/m). Regarding other requested body characteristics, black and mixed-race skin tones, as well as large breasts, buttocks, and penises are in high demand. There is a significant demand for unshaved bodies and no request for shaved ones. Attractive faces are only slightly more popular than unattractive faces (9,620 vs 6,100 s/m). Blonde hair has 70% more searches than brown hair and 6 times more than red hair. There is also a small demand for sexually explicit content featuring individuals with medical conditions such as dwarfs, disabled persons, or amputees (4,250 s/m).

Sexual fantasies

Prostitutes alone have the bigger demand on the internet (61,750 s/m) than sexual fantasies regarding teachers, students, and college students combined (54,130 s/m). When it comes to sexual fantasies starring women, MILFs (mothers of your friends that

Table 4 Searches of specific sexual practices.

Sexual practices	Volume s/m
Gay	347,930
Anal/Ass Fuck/Greek Sex	218,790
Questions about anal sex: how to do, practice, have, prepare, enjoy? / Enema	9,540
Lesbian	136,900
Oral/French/Mouth fuck	109,820
Questions about oral sex: how to / techniques?	11,690
Women / feminine /female /girls /girl oral sex	11,460
Lesbian oral sex	1,780
Oral sex men	4,180
Gay oral sex	990
Couple sex	49,780
In group / group / gang / orgy	34,090
Trio	30,420
Sex dolls	27,850
Sex toy	26,480
Tantric/ tantra	19,880
Doggy style	11,530
Vaginal	6,690
Swinger	6,140
Marriage	5,400
DP (double penetration)	4,750
Masturbating /Handjob	4,280
Bisexual	4,060
Squirt	3,340
Bud sex (heterosexual person who by circumstances has sex with the same gender)	2,790
Sex roulette	2,690
Standing	2,400
Missionary sex	2,290
Twerk	2,070
Cream Pie Sex (ejaculation in the vestibule of the vagina)	2,040
Dildo/Vibrator	2,010
Strap-on	1,990
Scissors	1,650
Spanking	1,320
Kamasutra	1,290
Russian roulette sex	1,190
Cougar (female having sex with much younger men)	1,070
Triple penetration	1,000
Deep oral sex	960
Cunnilingus	630
Black kiss	590
Facial (ejaculation on the face)	590
Fist / fisting	250

s/m: search per month

Supplementary Table 2 Searches on location and sexual activities.

Location	Volume s/m
Beach/nudist	73,660
Street/on the street/highway	20,590
Swimming pool/ in the water/underwater/ Jacuzzi	15,040
Outdoors/cruise sex/in the countryside/forest	11,760
Gym/fitness	9,490
Club/disco	7,810
At work	6,700
Office	6,000
Movies/ Cinema	5,140
Yoga class	5,130
At school/class/institute/high school	4,950
Park	4,390
Sauna	3,900
In the bar	2,700
Elevator	1,780
Restaurant	1,490
Public bathroom	1,470
Library	810
In the straw	740
Hospital	700
Church	700
Farm	430
Garage	430
Garden	430
Hair saloon	310
Location in the house	Volume s/m
Bathroom	9,060
Kitchen	7,870
Couch	3,300
Table: above/below	1,570

you would like to fuck) are the most popular category after prostitutes (22,080 s/m) (Table 6). Third in the female category are wives (13,920 s/m), followed by pregnant women, maids, neighbours, nurses, and secretaries. For men, teachers (in Spanish language clearly defined as masculine gender) have the highest search volume with 28,730 s/m. Doctors and plumbers follow with four times less demand, while delivery men have 10 times fewer requests.

Sex education

Questions that include the keywords “Sex” or “Fuck”, mostly inquiring about how to make, have or practice sex, account for 98,950 s/m and are depicted in Table 7. If we add the latter figure to more than 120,000 s/m related to education and sexual health, all together they account for 2.2% of all Google searches associated with the investigated keywords. The greatest interest of Internet users is focused on the aforementioned practice of oral sex and

Shower	1,120
Chair	740
Balcony	510
Ladder	500
Means of transport	Volumen b/m
Bus	17,550
Car	13,010
Cab / Taxi	4,740
Metro/Subway	4,660
Train	4,390
Plane	3,880
Ship	960
Motorcycle	420
Van	350
Truck	350
Situation	Volume s/m
Caught having sex	78,790
In public	41,900
Bachelorette party sex	14,930
Massage	13,740
Casting sex + agent	13,710
Party	12,400
Secretly	6,890
Unfaithful / infidelity	5,330
Cuckold	2,200
While talking on the phone	1,430
Fuck and smoke	1,330
Wedding	810
Screaming and fucking	810
Fucking and dancing	680
Revenge	630
s/m: search per month	

anal sex followed by queries about sexual positions (40,620 s/m), sex addiction (15,930 s/m), and sexual relations during pregnancy (12,660 s/m) or during menstruation (7,450 s/m). Other searches related to different aspects of sexual activity or preferences are given in Supplementary Table 3. These searches include:

Cartoon

Interest in comic or cartoon-type pornography outnumbers the demand for sexually explicit images of oral sex with 110,349 s/m, and to say the least, sexual fantasies about Disney princesses (2,270 s/m) surpasses that of sexual fantasies about waitresses or stewardesses.

Transgender

With the current claim of transgender states, this activity could be classified as the 5th most popular sexual practice or 1st sexual fantasy with almost 74,000 s/m.

Table 5 Age and physical characteristics.

Age and physical characteristics	Volume s/m
Mature/granny/old/grandpa/grandma/old ladies/grandmothers/ elderly/forty-somethings/fifty-somethings/veterans/sixty-something	535,190
Teen/18/ young/ adolescents/ teenage/ juvenile/16/15/ minor	205,490
Fat/chubby /obese/ solid/BBW (big beautiful women)	99,030
Skinny/thin	9,010
Anorexic	770
Big tits/busty	49,530
Natural tits	1,530
Small breast	790
Hanging tits	230
Big ass/ culonas	31,880
Small ass	90
Penises/cocks/dicks	19,190
Small penis	800
Small vagina	70
Hairy	29,800
Hairy men/bear sex/bears	3,280
Models/Supermodels	10,100
Muscular / bodybuilder	2,350
Normal	850
Pretty /beautiful/beauties/precious	9,620
Ugly	6,100
Blonde	34,500
Brunette	20,980
Red hair/ginger	6,210
Black + negros	96,880
Mulatto	3,930
Medical conditions	Volume s/m
Dwarves	3,020
Invalids/disabled	730
Amputees	500
s/m: search per month	

Incest

The study found that there is a significant demand for incest pornography, with an average of 29,220 s/m. The most popular sub-category within this genre is “mother,” with 12,090 s/m. When adding up all of the found incest categories, the practice would rank in popularity with 65,290 s/m as high as transgender pornography and twice as high as group sex.

Zoophilia and other paraphilias

According to the results, zoophilia (26,220 s/m) is 3 times less popular than incest, but at the same time twice as popular as pedophilia (13,020 s/m). Although the last result may be underestimated, since the Incest category “Son/daughter”, and other

Table 6 Sexual fantasies related to jobs, professions and social roles.

Professions & social roles and sex	Volume s/m
Whores/Prostitutes/ Sluts	61,750
Teacher/Professor/Maestro	28,730
College girls/students	25,400
MILF (Mother I would like to fuck)	22,080
Wife / Spouse	13,920
Sex with pregnant/ Pregnant fucking	12,960
Maid/ Chacha/ Cleaner/ Employee	11,660
Interracial	11,380
Friends	10,770
Medical doctor	7,300
Plumber	6,860
Housewife	5,990
Neighbor	5,890
Nurse	5,750
Strangers	4,180
Secretary	3,770
Twins	3,490
Ex	3,170
Twink (young boys)	2,850
Boss	2,520
Widow	2,430
Schoolgirls	2,400
Delivery man	2,250
Gynecologist	2,120
Waitress	1,960
Babes	1,420
Virgins/ Defloration	1,360
Repairman	1,340
Soccer	1,800
Prick	1,210
Stewardess	1,200
Electrician	1,090
Cowgirl	1,010
Yoga teacher	940
Police	940
Striper	840
Hairdresser	730
Saleswoman	490
Butanero (a man who sells natural gas on the streets)	420
Roommate	410
Truck driver	380
Pastry chef	320
s/m: search per month	

categories such as: “sex with high school girls”, “sex with school-girls”, “sex with 15” or “sex with 16” could be considered part of the pedophilia section.

Table 7 Searches related to sexual education.

Sex education	Volume s/m
Sexual postures/positions	40,620
Addiction/ addicted/ nymphomaniac	15,930
In pregnancy	12,660
Sex and period/ menstruation/ period	7,450
Pain/ hurts/ pain	6,750
Libido (drive)	6,400
Diseases/ Oral contagion/ Risks	4,900
Sex education	4,440
Tupper sex	3,270
Safe sex	2,510
Sex change operation	2,270
Sex with/without condom	2,260
HIV	1,910
Cancer	1,840
Lubricant	1,800
Sex Tips	1,640
Sex during childbirth/after childbirth/quarantine	1,110
Phimosis	740
Last longer in sex	730
Blood	650
Menopause	430
Clitoris	400
Sex after caesarean section	370
Hepatitis	260
Papilloma	260
Cystitis	260
Total	121,860
s/m: search per month	

Clothing

Clothing category could be considered to be included in sexual fetichisms and a part of paraphilias subgroup. The most requested pornography is with people dressed in lingerie (8,590 s/m), panties or thongs (6,340 s/m), followed by women wearing hijabs (3,400 s/m).

Celebrities

Interest in celebrities' sex-life accounts for more than 70,000 s/m. By far the most popular are the Kardashians (15,940 s/m), then the actors from the Spanish series La Que Se Avecina (5,910 s/m), and in third place Shakira (3,400 s/m). Regarding pornographic actors, the most famous are: Nacho Vidal (12,300 s/m), Torbe (11,690 s/m) and Daniela Blume (3,030 s/m).

Abuse of substances and sex

The abuse substances per excellence in the context of pornography turned out to be alcohol (17,060 s/m), followed by far by marijuana (850 s/m), cocaine (700 s/m) or heroin (290 s/m).

Supplementary Table 3 Other searches related to sex and sexual activities.

Cartoon characters	Volume s/m		
Cartoon/Comic/ /Hentai/Manga	84,510	Snake	220
Simpsons	11,840	Cats	210
Dragon ball/Bulma	4,140	Paraphilias	Volume s/m
Pokemon	3,060	Children/minors	13,020
Naruto	2,380	Voyeurism	9,320
Disney sex/Disney princesses	2,270	Feet/foot	6,940
Furry sex	1,070	Scat (defecation)	1,980
Sex criminals	1,070	Pee/ Urinate	1,180
Transgender	Volume s/m	Dead / Dead-body / Corps	730
Transvestites	32,400	Clothing	Volume s/m
Transgender	16,460	Underwear/lingerie	8,590
Shemale	10,000	With panties/thongs	6,340
Trans sex	7,410	Hijab	3,400
Hermaphrodites	3,130	Pantyhose/With stockings	2,590
Ladyboy	2,030	Cosplay	2,200
Crossdresser	1,770	With high-heels	1,900
Transgender	650	Leggings	960
Incest	Volume s/m	Mini skirt	860
Family Sex/ Incest	29,220	Fur	650
Categories		Gothic	260
Mom/Mother/Mummy/Mumy/Mama	12,090	Celebrities	Volume s/m
Cousin	9,290	Celebrities/Famous/Actors/Actresses	72,710
Brother and sister/between siblings/ Sister	6,180	Kardashians	15,940
Son / Daughter	2,520	Nacho Vidal	12,300
Father/Dad/Daddy	2,030	Torbe	11,690
Grandchildren	1,600	Mia Khalifa	7,220
Mother-in-law	1,570	LQSA (What's Coming)	5,910
Sister in law	400	Kim Kardashian	3,930
Uncle	390	Shakira	3,400
Zoophilia	Volume s/m	Daniela Blume	3,030
Zoophilia/Animals/Pets/Zoo/Farm	19,690	Esperanza Gomez	2,780
Animal type		Rebeca Linares	2,400
Goat	1,560	Alcohol and drugs	Volume s/m
Dog	1,490	Drunk	17,060
Hen	1,230	Marijuana/cannabis	850
Pig	1,030	Cocaine	700
Sheep	470	Drugged	420
Bull	320	Heroin	290
		s/m: search per month	

Discussion

The result of this research reports that in the territory of Spain around 10 million searches related to sex are carried out per month. A number that is surely underestimated, given the biggest limitation of this study, which could be not including all the searches performed using other search engines or searches not involving search engines.

Considering the population of Spain and the use of the Internet,

it could be concluded that 1 out of 4 residents of Spain clarifies their concerns related to sex through Google. To better understand the magnitude of this demand, the question “how to get there” is asked to Google only 1.5 million times a month. Nowadays, the internet is the primary channel for the distribution of pornography, offering a greater variety of images to a wider audience at a lower cost^[7]. There is no consensus on the prevalence of online pornography use, but a 2006 American study found that 47% of adults visited explicit websites and 36%

downloaded pornography in the last month^[8]. Studies show that adolescent exposure to explicit sexual content varies greatly by country, ranging between 7% and 98%^[9]. Additionally, there is a lack of statistics on the types of explicit sexual content requested by internet users.

According to the results of the present study, more than 97% of all searches that include the keywords “SEX” or “FUCK” made in Spain are requests for explicit sexual content.

The present study reveals the close relationship between sex and technology, with many searches for sexual experiences made through social networks and video games. This highlights the importance of technology in shaping sexual behaviour and desires. Moreover, our data show that the demand for sexual accessories is much higher than that for live sex events. This reflects the increasing acceptance and normalization of sex toys and other sexual aids in society^[10].

Another finding of our study was that the most popular style of pornography was amateur or home recordings, with residents of Spain seeking hard, wild, extreme, brutal, and fast sex. This suggests a preference for more intense sexual experiences, and an interest in exploring different forms of sexuality. Internet pornography has been considered as either motivating sexual aggression and abuse or as helping as a safety valve. This dichotomy is a critical issue in health, media, and social politics. According to observational studies on pornography, soft-pornography and non-violent pornography has been regarded as innocuous, whereas non-violent hard-core pornography and violent pornography may increase the risk of aggression^[11].

It is interesting to note that the most popular ethnic group in pornography is Spaniards or those who speak Spanish, followed by Latinos and Arabs, results that correlate positively with the immigration rates in Spain. Similar findings were observed in a qualitative survey regarding pornography-viewing habits of urban adolescents in Boston^[12], and this reflects preference as well as content that is more familiar and culturally relevant to the audience.

In our web analysis, the most popular sexual practices included gay sex, anal sex, lesbian sex, and oral sex. Oral sex garners a lot of queries regarding technique, and there is a significant gender disparity, with oral sex in women being searched for three times as much as in men. The superior female interest in watching and learning oral sex has already been described by different authors^[12,13].

One not-at-all surprisingly data reported in our study is that the physical and age characteristics that are most sought in pornography users in Spain aren't ideal bodies. Mature actors and plus-sized actresses were those more demanded, suggesting a preference for more realistic depictions of sexuality, and a rejection of mainstream beauty standards. This finding is similar to that observed by Kvale among Norwegian Gay and Bisexual Men^[14]. Men with less ideal bodies were chosen to watch pornographic actors with body shapes similar to their own and in this way, self-perceived attractiveness viewing Internet pornography made a unique contribution to higher self-esteem as a sexual partner.

Although our study is purely descriptive, to categorize as paraphilia, some of the demands for explicit sexual content is a challenging task, given the ambiguity surrounding the definition

of paraphilia and the range of behaviors that may be considered part of it. Paraphilia encompasses sexual practices that go beyond those considered acceptable by the cultural model within which they are practiced, and as such, may be judged aberrational. If we include categories such as incest, zoophilia, dominance-submission games, clothing, and medical conditions under the umbrella of paraphilias, approximately 2.8% of all searches, or 275,570 s/m, can be classified as such. Interestingly, Hill *et al.*^[11] highlight that the phenomenon of “sexual addiction” (or paraphilia - related disorder) is particularly relevant in relation to the abuse of internet pornography and strongly recommended preventive measures to protect possible victims as well as treatment strategies for offenders. On the other hand, erotic target identity inversions are poorly studied paraphilias that involve sexual arousal by the idea or fantasy of being the object of one's sexual desires. Data by Brown *et al.*^[15] support the concept of paraphilic dimension in non-clinical samples as in our study and the possible role of gender-related psychological factors.

Overall, the present study provides valuable insights into the sexual interests and desires of residents of Spain. It highlights the important role that technology plays in shaping sexual behavior, and the need for greater understanding of the cultural and social factors that influence sexual preferences. The findings of this study can inform efforts to promote sexual health and education and contribute to a more open and informed discussion of sexuality in society.

Strengths of this study include the large, non-clinical sample of men and women. The acquisition of data by an Internet search engine may be unrepresentative since extracted data is based exclusively on the key words used, although the Internet has the advantage of allowing recruitment from stigmatized or unusual groups. In addition, the anonymous nature of the internet searches allows us to obtain an actual picture of the real demands of users. The cross-sectional nature limits our conclusions, as no causal inferences can be made and unfortunately, we cannot draw any conclusions regarding the impact of the internet on real life sexual behavior because this was not part of the design of the study. Other limitations include: the loss of data associated with searches carried out through search engines other than Google, searches that skip the step of a search engine, and knowing that it is possible to analyse the presented data classifying it by sex, age and autonomous community of the users, in addition expanding the range of investigated keywords and the period of time for data collection, we can improve our knowledge about human sexuality and its modern tendencies.

Conclusion

Big Data will surely revolutionize the way the human sciences study human beings. Using our methodology, the present study is pioneer in the field of sexuality in relation to the Spanish territory. The analysis of the data carried out here is a mere attempt to assess the sexuality of the residents of Spain using information free from social desirability bias.

The influence of Internet on human sexuality is still to be evaluated. Perhaps by analyzing the data from the last decade

or two, relating it to the results of field studies, we could more clearly appreciate the consequences of the abundance of audiovisual material with explicit sexual content on human sexuality.

Finally, there is still a lot of available data to analyze and interpret and considering the fast advancing of technology, in the next future the big data and the artificial intelligence hold the key to our understanding of human sexuality.

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