“Is coprolalia a tic or functional?”

“No, it is not a tic”

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What is coprolalia?

Coprolalia is conceptualized as a complex vocal tic exhibiting non-intentional obscene and socially inappropriate verbal expressions

Shapiro et al. (1988) used the term “coprophilia” defined as “*involuntary, socially unacceptable, commonly obscene, sounds, words, phrases, concepts, or gestures*”

Comings (1990) defined coprolalia as “*compulsive swearing*” that - in contrast to simple swearing - occurs in a “*compulsive, repetitive, almost ritualistic fashion*”

Freeman et al. (2009) described coprophenomena as having a *“vulgar (obscene), religious (profane), or racially or ethnically insulting content, not expressed out of immediate anger or frustration, or solely for purposes of emphasis”*

“I swear it is Tourette's!”: On functional coprolalia and other tic-like vocalizations

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Psychiatry Research 246 (2016) 821–826

Table 1
Clinical characteristics of patients with functional coprolalia and other functional complex tic-like vocalizations. GTS=Gilles de la Tourette syndrome; NOSI=Non-obscene socially inappropriate behaviors; ADHD = Attention-deficit hyperactivity disorder; OCD = Obsessive-compulsive disorder.

Case Number	Age/ Sex	Age at onset of functional tic-like symptoms	Modality of onset/ Precipitants	Symptoms at onset	Simple vocalizations on presentation	Complex vocalizations on presentation: Coprolalia	Complex vocalizations on presentation: …cholalia/ …alilalia/NOSI	Blocking phenomena	Other movements on presentation	Urge	Suggestibility/ Distractibility/ Suppressibility	Stereotyped nature/ Fluctuations	Other functional symptoms	Previous Treatments/ Improvement	Previous Diagnosis
1	42/ M	33	Abrupt/Mild accident	Episodic hand tremor	“Eh”	“Ficken” “Kacken” “Kackficken”	…alilalia: Nonsense …ords (“tiff”, “taff”, …iff”)	No	Blinking, Head banging, Hitting head with hand, Episodic hand tremor	Yes	No/Yes/Yes	Yes/Yes	Urge to hit himself against objects, functional hyposmia, episodic whole-body shivering	None	GTS
2	10/ M	5	Abrupt/ School mobbing	Stuttering	Snuffling, coughing, engine noise, moaning	“Arsch”, “Hurensohn” “Vollidiot”, “fick dich”	…alilalia: “Hilfe” (up … 15 fold)	Speech blocks	Multifocal jerky movements	No	Yes/Yes/No	Yes/Yes	Episodic double vision	None	GTS
3	35/ M	26	Abrupt/ Change of work	Snuffling, blinking	None	“ich will dich in den Arsch ficken”, “du bist häsdich”, “ich kann dich nicht leiden”	…cholalia while …atching TV	Speech blocks	Rapid multifocal jerking, urge to exert pressure on arteries and genitals	Yes	No/Yes/Yes	Yes/Yes	Urge to look into sun, dizzy spells, functional hypaesthesia	Botulinum toxin in vocal cords/ Improvement due to hoarseness; Aripiprazole, Quetiapine, Fluoxetine/No improvement	GTS
4	17/F	14	Abrupt/ Familial conflict	Repetition of a single word (“Korb”)	Screaming, syllables (“…”, “he”, “paha” “lalalala”, “oh”, “ih”, “ehm”)	“fick dich”, “du Hurentochter”, “du abgefickte Schlampe”, “Hure”, “Fotze”, Dreckschwein”, “Hurensohn”, “fick dich”, “Scheiße”, “Schlange”, Nutte”, “ich liebe dich”, “ich will ein Kind von dir”	…rmediate ambient …cholalia; Palilalia: …meine”, “ok”, …ian”, “Kevin”, “ich …in fertig damit”, …leider nein” “Bolle” (nonsense …ord))	Slurring	Jerky limb movements, pulling on the curtain (only when listening to songs), pinching others, knocking against the wall, peace sign, showing the middle finger (only in the presence of others)	Yes	Yes/Yes/Yes	Yes/Yes	None	Risperidone, Fluvoxamine/ None	GTS plus ADHD
5	19/ M	13	Abrupt, while watching TV	Sticking out his tongue Noises similar to gagging	Gagging, groaning	Schwein, Sau, Arschloch, Hure, Ficker, Fotze, Fisskopf, Schwuchtel, Hurensohn, Fickfippe,	…o	No	Bizarre and complex whole-body movements with twisting and backward arching of trunk	Yes	Yes/Yes/Yes	Yes/ Yes	None	Sulpiride, Lorazepam, Clonazepam, Chlorprothixene, Methylphenidate, Aripiprazole – all without effect, but adverse effects (e. g. not able to speak under treatment with Aripiprazole) Symptom-free when smoking	GTS plus ADHD

(continued on next page)

Functional tic-like Behaviors (FTLB)

TABLE 2 List of the categories and types of functional tic-like behaviours documented in patients in the registry.

FTLB category	FTLB types
Complex phonic	Nonsensical, non-obscene syllables, words, or sentences (utterances not directed to people around) List: *beans*, *beans-and-greens*, *freckle-speckles*, *boom*, *beep-beep*, *hum or hum-hum*, *ah*, *ee*, *no*, *it's time*, *mom*, *cow*, *pretty cow*, *silly cow*, *pretty lady*, *fe-fi-fo*, *Bob the builder*, *it's blue*, *cockadoo*, *cannot remember*, *ice-cream*, *knock-knock*, *niah*, *oops*, *crullers*, *wow*, *chicken*, *chicken nuggets*, *chips*, *movie quotes*, *babushka*, *already*, *pica-pica*, *I'm a potato*, *party time*, *hops*, *cheese*, *Tommy*, *bonk*, *whatever*, *beetroot*, *kicking it with the boys*, *I'm Peppa Pig*, *coffee or car* (after having smelled or seen it), *death*, *die*, *strong*, *a turtle in a tree*, *frog on a leg*, *miller*, *I cannot get up*, *cuckoo*, *bing-bong*, *complex jingles* Meaningful, non-obscene words or sentences (utterances potentially directed to people around) List: *I have COVID*, *hi*, *hello*, *you are welcome*, *sorry*, *hey listen*, *I'm going to jail*, *it's tea time*, *you are late for tea*, *I have a gun*, *I have cancer*, *gross*, *it's a monstrosity*, *happy birthday*, *how are you*, *I'm gay*, *I am not well*, saying *'tic'* before one, saying *'it's not a tic'* before one, *go away*, *do not touch me*, saying the opposite of what heard, *shut up*, *bye-bye*, *learn how to drive*, *I love you*, *good morning*, *you are mean*, *get a life*, *oh you are hurting me*, *get lost* Coprolalic utterances List: *fuck off*, *fuck you*, *loser*, *weirdo*, *butthole*, *pissbaby*, *this is a bitch*, *nice tits*, *whore*, *slutty*, *stripper*, *dick*, *dickhead*, *eat my cookie*, *fuckwit*, *fucky duck*, *in your face*, *cocaine down her throat*, *cocaine*, *go to hell*, *your mom*, *suck my ass*, *shit*, *pussy*....and many more Echolalia or imitative utterances (usually Anime characters, movies, or TV) Palilalia or other forms of self-repetition

Abbreviation: FTLB, functional tic-like behaviour.

European Society for the Study of Tourette Syndrome 2022 criteria for clinical diagnosis of functional tic-like behaviours: International consensus from experts in tic disorders

Tamara Pringsheim[1] | Christos Ganos[2] | Christelle Nilles[1] | Andrea E. Cavanna[3,4,5] | Donald L. Gilbert[6,7] | Erica Greenberg[8] | Andreas Hartmann[9] | Tammy Hedderly[10] | Isobel Heyman[11] | Holan Liang[11] | Irene Malaty[12] | Osman Malik[13] | Nanette Mol Debes[14,15] | Kirsten Muller Vahl[16] | Alexander Munchau[17] | Tara Murphy[11] | Peter Nagy[18] | Tamsin Owen[10] | Renata Rizzo[19] | Liselotte Skov[20] | Jeremy Stern[21] | Natalia Szejko[22] | Yulia Worbe[23] | Davide Martino[1]

Eur J Neurol. 2023;30:902–910.

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TABLE 4 Differences in clinical characteristics between registry patients reporting and denying exposure to tic-related social media videos.

Clinical feature	Patients reporting exposure to tic-related social media videos $n = 155$	Patients denying exposure to tic-related social media videos $n = 115$	Statistical test
Presence of complex phonic tics	135 of 155 (87%)	81 of 115 (70%)	$\chi^2 = 11.5, p = 0.001$
Coprophenomena	104 of 155 (67%)	50 of 115 (43%)	$\chi^2 = 15, p < 0.0001$
Spontaneous remissions	44 of 155 (29%)	13 of 115 (11%)	$\chi^2 = 11.6, p = 0.001$
Other concurrent functional neurological symptoms	72 of 155 (46%)	40 of 115 (35%)	$\chi^2 = 3.7, p = 0.05$
Premonitory urges	79 of 155 (51%)	41 of 115 (36%)	$\chi^2 = 6.3, p = 0.01$
Suppressibility of tics	75 of 155 (48%)	37 of 115 (32%)	$\chi^2 = 7.1, p = 0.007$
Pre-existing autism spectrum disorder	28 of 155 (18%)	41 of 115 (36%)	$\chi^2 = 10.7, p = 0.001$

Diagnosis and Management of Functional Tic-Like Phenomena

Irene A. Malaty [1], Seonaid Anderson [2], Shannon M. Bennett [3], Cathy L. Budman [4], Barbara J. Coffey [5], Keith A. Coffman [6], Erica Greenberg [7], Joseph F. McGuire [8], Kirsten R. Müller-Vahl [9], Michael S. Okun [1], Julio Quezada [6], Amy Robichaux-Viehoever [10] and Kevin J. Black [11,*]

J. Clin. Med. **2022**, *11*, 6470. https://doi.org/10.3390/jcm11216470

Table 1. Features of relevance to differentiating FND from TS.

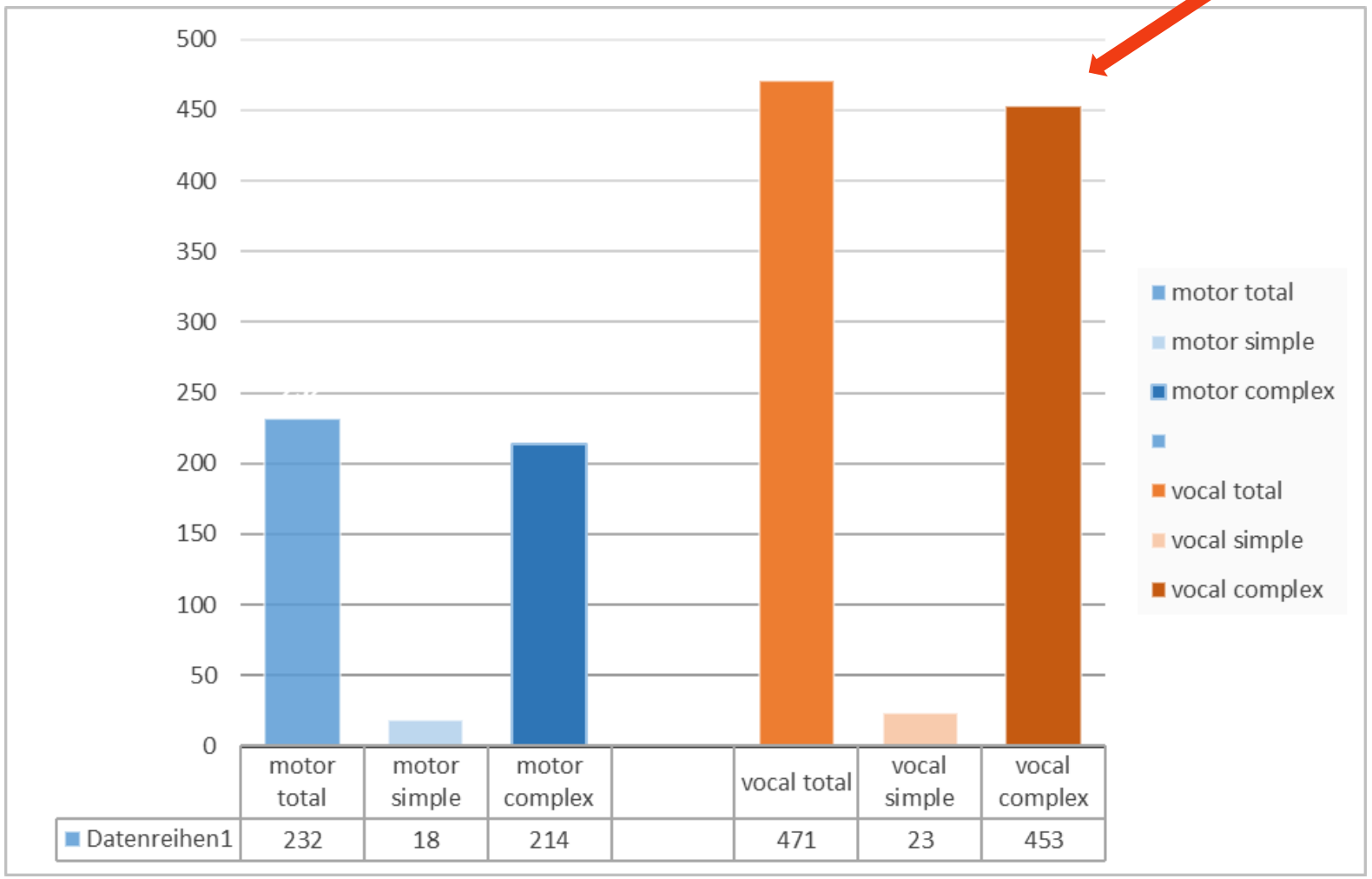
Features near the top of the list are more common in FND than in TS, but are seen in TS as well, and are not diagnostic in isolation. Features may not be unique to either condition, nor prerequisite, but are more commonly present. Features near the bottom of the list strongly suggest FND.

- Anxiety (higher prevalence)
- Female predominance (greater proportion of affected individuals)
- No family history of tics, OCD or ADHD
- No personal history of OCD, ADHD, or earlier typical tic disorder
- No urge to tic or premonitory sensation (some young children do not report urges or premonitory sensations)
- Onset in the mid-teen years
- Significant variability of tic symptoms (vs. stereotyped tics)
- No response, or atypical response, to proven tic-suppressing medications
- Symptoms in extremities before face and neck (lack of typical rostrocaudal progression)
- Symptoms that dramatically and persistently disrupt the person's intended actions or communications
- Symptoms that the patient has not previously experienced that closely replicate those of someone whom the patient has observed
- Extreme "attacks" of tic-like behavior—discrete episodes of complex movements and/or vocalizations, lasting from minutes to several hours with an abrupt onset and offset, often described as appearing to be "seizure-like" and often early in the course (Robinson and Hedderly, 2016 and Heyman et al. 2021)
- Inability to suppress, even temporarily
- Severity of movements and vocalizations is constant over time rather than waxing and waning
- Movements or vocalizations that are dramatically more severe in the presence of others versus when alone
- Onset in adulthood
- Presence of other functional neurological symptoms
- Sudden, abrupt onset
- Severe symptoms at onset
- Coprophenomena at onset
- Lack of perceived agency (a sense that the movement is done to the patient rather than by them)
- Tics involving the body or limbs without a history of tics involving the eyes, face, and head

Number of motor/vocal and simple/complex Symptoms (n=32)

vocal >>> motor

complex >>> simple



Mass social media-induced illness presenting with Tourette-like behavior

Carolin Fremer[1], Natalia Szejko[2,3], Anna Pisarenko[1], Martina Haas[1], Luise Laudenbach[1], Claudia Wegener[4] and Kirsten R. Müller-Vahl[1]*

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doi: 10.3389/fpsyt.2022.963769

Functional Tic-Like Behaviors: A Common Comorbidity in Patients with Tourette Syndrome

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MOVEMENT DISORDERS CLINICAL PRACTICE 2024; 11(3): 227–237. doi: 10.1002/mdc3.13932

Abstract: Background: Comorbid functional tic-like behaviors (FTB) have been described only rarely in patients with Tourette syndrome (TS).

Objectives: We present the first large sample of patients suffering from TS and FTB to raise awareness of this clinical presentation and to guide how to differentiate one from the other.

Methods: We analyzed clinical data of 71 patients (n = 27 [38.0%] female, mean age: 21.5, range: 11–55) with TS + FTB.

Results: In the majority of patients, FTB started abruptly on average 15 years after tic onset with "treatment-resistant" complex movements and ("coprophenomena-like") vocalizations preceded by timely related psychological stressors. Psychological evaluation revealed evidence for internal conflicts (79%), emotional dysregulation (56%), and maintaining factors (70%). About one third of patients had a positive history for further medically unexplained symptoms. Compared to a large TS sample (n = 1032), patients with TS + FTB were more likely to be female, and presented significantly more common with "coprophenomena-like" symptoms, atypical influential factors, atypical descriptions of premonitory sensations, and higher rates of comorbid obsessive-compulsive disorder and "self-injurious" behavior.

Conclusions: Based on our data it can be assumed that FTB is a common comorbidity in TS, similar to functional overlay in other movement disorders and epilepsy. Before classifying a patient as suffering from treatment-resistant TS, FTB should be ruled out.

TABLE 1 Comparison of patients with TS + FTB ($n = 71$) with an independent sample of patients with primary tic disorders (TS, $n = 1032$)

	TS + FTB	TS	*P*
Female, n (%)	27 (38%)	236 (23%)	**0.003**
Age (mean, SD)	21.5 (12.7)	18.98 (12.97)	0.1
Tic onset (mean age, SD)	6.3 (2.3)	7.17 (3.72)	0.06
Number of psychiatric comorbidities	2.3 (1.32)	2.67 (1.57)	0.4
OCD, n (%)	16 (23%)	103 (10%)	**0.0009**
OCS, n (%)	41 (58%)	637 (67%)	0.5
ADHD, n (%)	26 (37%)	463 (44.9%)	0.18
Anxiety, n (%)	19 (27%)	323 (31%)	0.4
Depression, n (%)	23 (32%)	236 (23%)	0.07
SIB, n (%)	40 (56.3%)	405 (39.4%)	**0.009**
Coprophenomena/ "coprophenomena-like" symptoms, n (%)	31 (43%)	289 (28%)	**0.005**

Abbreviations: TS, Tourette syndrome; FTB, functional tic-like behaviors; SD, standard deviation; OCD, obsessive-compulsive disorder; OCS, obsessive-compulsive symptoms; ADHD, attention-deficit hyperactivity disorder; SIB, self-injurious behavior.

Neurodevelopmental Tics with Co-Morbid Functional Tic-like Behaviors: Diagnostic Challenges of a Complex Tourette Syndrome Phenotype

Andrea Eugenio Cavanna [1,2,3,4,5,6,*], Virginia Caimi [5,6], Elisa Capriolo [5,6], Matteo Marinoni [5,6], Gabriele Arienti [5,6], Anna Riva [5,6], Renata Nacinovich [5,6] and Stefano Seri [3]

Brain Sci. **2025**, *15*, 435

Table 2. Clinical characteristics of patients with Tourette syndrome (TS) and co-morbid functional tic-like behaviors (FTLBs) compared to an independent sample of age- and sex-matched controls with TS (N = 63).

	TS + FTLBs	TS	*p*-Value
Age at onset—years (mean, sd, range) *	22.4 (±9.4) (12–60)	7.6 (±3.8) (1–17)	<0.001
Yale Global Tic Severity Scale tic severity score (mean, sd, range)	27.1 (±9.4) (7–45)	28.2 (±9.7) (9–49)	0.532
Rostrocaudal distribution (N, %) *	4 (6.3%)	49 (77.8%)	<0.001
Premonitory urges (N, %) *	25 (39.7%)	61 (96.8%)	<0.001
Simple motor tics (N, %) *	40 (63.5%)	63 (100%)	<0.001
Complex motor tics (N, %) *	57 (90.5%)	50 (79.4%)	0.134
Simple vocal tics (N, %) *	34 (54.0%)	63 (100%)	<0.001
Complex vocal tics (N, %) *	50 (79.4%)	26 (41.3%)	<0.001
Coprolalia (N, %) *	40 (63.5%)	22 (34.9%)	0.002
Tic-related self-injurious behaviors (N, %) *	38 (60.3%)	7 (11.1%)	<0.001
Tic attacks (N, %) *	23 (36.5%)	0 (0%)	<0.001
Family history of neurodevelopmental tics (N, %)	32 (50.8%)	31 (49.2%)	1
Obsessive-compulsive disorder (N, %)	13 (20.6%)	14 (22.2%)	1
Obsessive-compulsive behaviors (N, %)	46 (73.0%)	40 (63.5%)	0.214
Attention-deficit and hyperactivity disorder (N, %)	29 (46.0%)	11 (17.5%)	0.001
Autism spectrum disorder (N, %)	19 (30.2%)	3 (4.8%)	<0.001
Affective disorder (N, %)	33 (52.4%)	22 (34.9%)	0.072
Anxiety disorder (N, %)	45 (71.4%)	9 (14.3%)	<0.001
Non-epileptic attack disorder (N, %)	19 (30.2%)	0 (0%)	<0.001
Functional movement disorder (N, %) **	14 (22.2%)	0 (0%)	<0.001
Pharmacotherapy (N, %)	41 (65.1%)	37 (58.7%)	0.582
Psychotherapy (N, %)	20 (31.7%)	16 (25.4%)	0.555

* FTLBs in the group of patients with TS + FTLBs. ** Different from FTLBs.

1.) PREVALENCE RATE OF COPROLALIA

Prevalence rates for coprolalia range from 4–74%

Coprophenomena in Tourette syndrome

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Developmental Medicine & Child Neurology 2009, 51: 218–227

N=597

Table I: Studies on coprophenomena

Authors	*n*	Male: female ratio	Age at tic onset (y)	Age at onset of coprophenomena (y)	Delay between tic and coprophenomena onset (y)	Coprolalia (%)	Copropraxia (%)	Coprolalia: copropraxia ratio
Cardoso et al. 1996[18]	32	3:1	7.1	–	–	28	25	1.12
Chang et al. 2004[19]	43	7.6:1	9.7	–	–	44.1	–	–
Comings & Comings 1985[20]	250	4:1	6.9	–	–	33	–	–
Eapen et al. 2004[21]	91	1.8:1	7.3	14.6	7.3	42.9	23.1	1.86
Fen et al. 2001[22]	58	1.6:1	–	–	–	27.6	20.1	1.37
Goldenberg et al. 1994[23]	112	4.1:1	6.9	9.1	2.2	8	–	–
Jankovic & Rohaidy 1987[24]	112	3.8:1	7.3	–	–	44[a]	19.0	2.32
Kano et al. 1997[25]	64	6.1:1	6.9	–	–	50	–	–
Lees et al. 1984[26]	53	–	7	11	–	39	21	1.86
Miranda et al. 1999[27]	70	–	6.4	–	–	8.5	–	–
Robertson et al. 1988[4]	90	2.3:1	7	15.1	8.1	33.0	17.8	1.85
Robertson et al. 1999[28]	280	3.2:1	–	–	–	29	–	–
Robertson et al. 2002[29]	57	3.8:1	6	–	–	40.0	25.0	1.60
Shapiro et al. 1988[5]	666	3:1	6.5	8-12	–	32	12.8	2.50
Teive et al. 2001[30]	33	1.75:1	–	–	–	–	–	–
TIC, 2008	558	4:1	5.9	11.3	5.4	18.4	5.7	3.23

[a]Includes some mental coprolalia; [b]adults only (age ≥16y); –, data not provided; TIC, Tourette Syndrome International Database Consortium (the present study).

Review articles

The prevalence and epidemiology of Gilles de la Tourette syndrome Part 1: The epidemiological and prevalence studies

Mary M. Robertson*

Journal of Psychosomatic Research 65 (2008) 461–472

- Coprolalia
  - uncommon
  - in only 10–15% of all GTS patients
  - in about 30% of dedicated GTS clinic patients
  - usually begins at around 15 years

The Phenomenology of Tics in Adults: Data From the Calgary and Paris Adult Tic Disorders Registry

European Journal of Neurology, 2025; 32:e70252
https://doi.org/10.1111/ene.70252

Christelle Nilles[1] | Yulia Worbe[2,3,4] | Andreas Hartmann[2,5] | Davide Martino[6] | Julian Fletcher[6] | Naoual Serari[5] | Catherine Deans[6] | Isabella Davenport[6] | Emmanuel Roze[3,5] | Tamara Pringsheim[6]

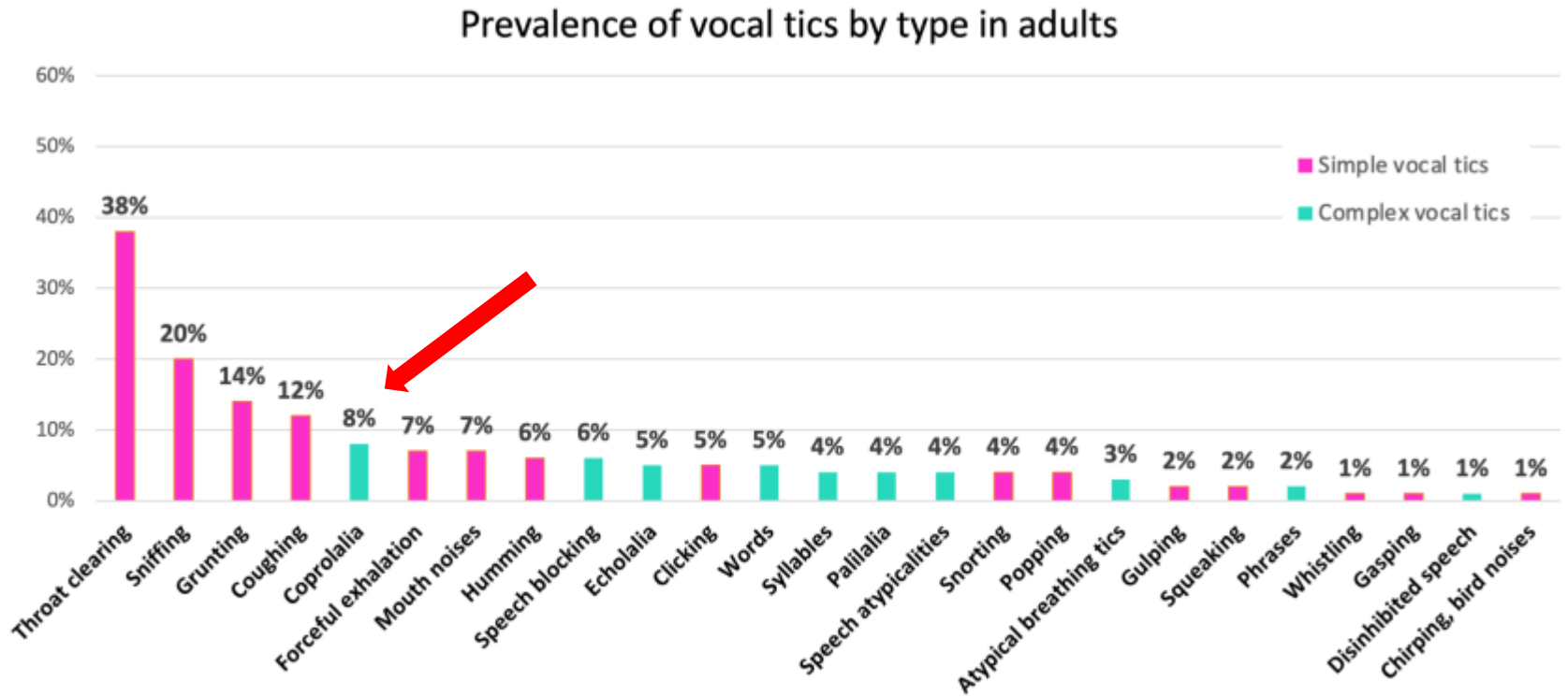

FIGURE 2 | Prevalence of vocal tics by type.

N=227

Have We Forgotten What Tics Are? A Re-Exploration of Tic Phenomenology in Youth with Primary Tics

Christelle Nilles, MD,[1] Davide Martino, MD, PhD,[2,3,4] Julian Fletcher, BA,[2] and Tamara Pringsheim, MD[1,2,3,4,*]

MOVEMENT DISORDERS CLINICAL PRACTICE 2023; 10(5): 764–773. doi: 10.1002/mdc3.13703

N=203

TABLE 2 *Phenomenology of phonic tics in youth with primary tic disorders and differences between sexes*

	All ($n = 203$)	Females ($n = 48$)	Males ($n = 155$)	OR (95% CI), P-value
Simple phonic tics, n (%)				
Coughing	29 (14.7%)	3 (6.3%)	26 (17.3%)	OR = 0.32 (0.09–1.10), $P = 0.071$
Throat clearing	84 (42.4%)	19 (39.6%)	65 (43.3%)	OR = 0.86 (0.44–1.66), $P = 0.647$
Sniffing	50 (25.3%)	18 (37.5%)	32 (21.3%)	**OR = 2.21 (1.10–4.47), $P = 0.027$***
Snorting	5 (2.5%)	2 (4.2%)	3 (2.0%)	OR = 2.13 (0.35–13.14), $P = 0.415$
Grunting	13 (6.6%)	7 (14.6%)	6 (4.0%)	**OR = 4.10 (1.30–12.87), $P = 0.016$***
Gulping	2 (1.0%)	0	2 (1.3%)	-
Whistling	6 (3.0%)	3 (6.3%)	3 (2.0%)	OR = 3.27 (0.64–16.75), $P = 0.156$
Humming	20 (10.1%)	5 (10.4%)	15 (10.0%)	OR = 1.05 (0.36–3.05), $P = 0.934$
Mouth noises	4 (2.0%)	1 (2.1%)	3 (2.0%)	OR = 1.04 (0.11–10.26), $P = 0.972$
Clicking	11 (5.6%)	5 (10.4)	6 (4.0%)	OR = 2.79 (0.81–9.59), $P = 0.103$
Popping	3 (1.5%)	2 (4.2%)	1 (0.7%)	OR = 6.48 (0.57–73.08), $P = 0.131$
Kissing	0	0	0	-
Burping	2 (1.0%)	0	2 (1.3%)	-
Hiccups	2 (1.0%)	0	2 (1.3%)	-
Forceful exhalation	11 (5.6%)	1 (2.1%)	10 (6.7%)	OR = 0.30 (0.04–2.39), $P = 0.254$
Wheezing	0	0	0	-
Gasping	5 (2.5%)	1 (2.1%)	4 (2.7%)	OR = 0.78 (0.08–7.12), $P = 0.823$
Bird noises	3 (1.5%)	3 (6.3%)	0	-
Barking, dog noises	0	0	0	-
Animal noises	15 (7.6%)	6 (12.5%)	9 (6.0%)	OR = 2.24 (0.75–6.65), $P = 0.147$
Squeaking	11 (5.6%)	2 (4.2%)	9 (6.0%)	OR = 0.68 (0.14–3.27), $P = 0.631$
Complex phonic tics, n (%)				
Syllables	24 (12.1%)	6 (12.5%)	18 (12.0%)	OR = 1.05 (0.39–2.81), $P = 0.926$
Words	11 (5.6%)	5 (10.4%)	6 (4.0%)	OR = 2.79 (0.81–9.59), $P = 0.103$
Phrases	4 (2.0%)	1 (2.1%)	3 (2.0%)	OR = 1.04 (0.11–10.26), $P = 0.972$
Coprolalia	10 (5.1%)	2 (4.2%)	8 (5.3%)	OR = 0.77 (0.16–3.76), $P = 0.749$
Echolalia	22 (11.1%)	4 (8.3%)	18 (12.0%)	OR = 0.67 (0.21–2.08), $P = 0.484$
Palilalia	19 (9.6%)	6 (12.5%)	13 (8.7%)	OR = 1.51 (0.54–4.21), $P = 0.435$
Speech blocking	15 (7.6%)	4 (8.3%)	11 (7.3%)	OR = 1.15 (0.35–3.79), $P = 0.820$
Speech atypicalities	18 (9.1%)	5 (10.4%)	13 (8.7%)	OR = 1.23 (0.41–3.63), $P = 0.714$
Disinhibited speech	5 (2.5%)	2 (4.2%)	3 (2.0%)	OR = 2.13 (0.35–13.14), $P = 0.415$

*P-value <0.05.
Abbreviations: CI, Confidence Interval; OR, odds ratio.

2.) AGE DEPENDENCY OF COPROLALIA

Coprophenomena in Tourette syndrome

ROGER D FREEMAN MD[1] | SAMUEL H ZINNER MD[2] | KIRSTEN R MÜLLER-VAHL MD PHD[3] |
DIANE K FAST MD PHD[1] | LARRY J BURD PHD[4] | YUKIKO KANO MD PHD[5] | ARIBERT ROTHENBERGER MD[6] |
VEIT ROESSNER MD[6] | JACOB KERBESHIAN MD[4] | JEREMY S STERN MB, BCHIR[7]

Developmental Medicine & Child Neurology 2009, 51: 218–227

- Overall prevalence of coprophenomena: 19.3%
  - Children: 17.6%
  - Adults: 28.6%
- "Coprolalia ever": 18.5%
  - Children: 16.9%
  - Adults: 27.5%
- "Copropraxia ever": 5.7%
  - Children: 5.8%
  - Adults: 5.5%

N=597

- In 11% of those with coprolalia and 12% of those with copropraxia these coprophenomena were one of the initial symptoms of Tourette syndrome.

frontiers in Neuroscience

ORIGINAL RESEARCH
published: 12 September 2016
doi: 10.3389/fnins.2016.00415

New Insights into Clinical Characteristics of Gilles de la Tourette Syndrome: Findings in 1032 Patients from a Single German Center

Tanvi Sambrani[1,2], Ewgeni Jakubovski[2] and Kirsten R. Müller-Vahl[2]*

Prevalence rates of coprophenomena demonstrated a significant association with age (X2 = 23.227; p < 0.001):

- **<10 y:** **19.6%** (n=36)
- **10–12 y:** **23.2%** (n=46)
- **>12 y:** **32%** (n=208)

TABLE 5 | Tic severity* depending on presence (±) of certain complex tics.

Complex tic		*N*	Mean STSS-GSR	*SD*	Std. error	*t*-value	Significance
Coprophenomena	+	278	3.36	1.255	0.075	−10.093	$p < 0.001$
	−	721	2.57	1.052	0.039		
Coprolalia	+	239	3.46	1.262	0.082	−10.742	$p < 0.001$
	−	757	2.58	1.050	0.038		
Copropraxia	+	154	3.49	1.280	0.103	−8.473	$p < 0.001$
	−	843	2.66	1.096	0.038		
Echolalia	+	280	3.21	1.220	0.073	−7.438	$p < 0.001$
	−	717	2.62	1.100	0.041		
Echopraxia	+	227	3.19	1.292	0.086	−6.101	$p < 0.001$
	−	770	2.67	1.098	0.040		
Palilalia	+	325	3.22	1.175	0.065	−8.406	$p < 0.001$
	−	670	2.58	1.104	0.043		

**according to STSS-GSR.*
STSS-GSR, Global Severity Rating of the Shapiro Tourette-Syndrome Severity Scale; N, number of cases; SD, standard deviation; Std., Standard.

3.) CROSS-CULTURAL DIFFERENCES

Cross-cultural Differences

Most researchers believe that there are no substantial racial, ethnic, or cultural differences (“remarkable degree of cross cultural uniformity”)

Lees AJ, Robertson M, Trimble MR, Murray NM. A clinical study of Gilles de la Tourette syndrome in the United Kingdom. J Neurol Neurosurg Psychiatry 1984;47(1):1–8. https://doi.org/10.1136/jnnp.47.1.1

Robertson MM, Verrill M, Mercer M, James B, Pauls DL. Tourette’s syndrome in New Zealand. A postal survey. Br J Psychiatry 1994;164(2):263–266. https://doi.org/10.1192/bjp.164.2.263

Jafari F, Abbasi P, Rahmati M, Hodhodi T, Kazeminia M. Systematic Review and Meta-Analysis of Tourette Syndrome Prevalence; 1986 to 2022. Pediatr Neurol 2022;137:6–16. https://doi.org/10.1016/j.pediatrneurol.2022.08.010

Cross-cultural Differences of Coprolalia

- Japan: low rates of coprolalia of only 4–11%

  Kondo K, Nomura Y. Tourette syndrome in Japan: etiologic considerations based on associated factors and familial clustering. Adv Neurol 1982;35:271–276.

- New Zealand and Hong Kong: high rates of coprolalia of 46% and 60%, respectively

  Robertson MM. The prevalence and epidemiology of Gilles de la Tourette syndrome. Part 2: tentative explanations for differing prevalence figures in GTS, including the possible effects of psychopathology, aetiology, cultural differences, and differing phenotypes. J Psychosom Res 2008;65(5):473–486. https://doi.org/10.1016/j.jpsychores.2008.03.007

Review articles

The prevalence and epidemiology of Gilles de la Tourette syndrome
Part 1: The epidemiological and prevalence studies

Mary M. Robertson*

Journal of Psychosomatic Research 65 (2008) 461–472

Cross-cultural Differences

Table 1
Examples of GTS cases previously not reported illustrating the cross-cultural similarity in gender distribution and GTS phenomenology (all obtained from pc's—Robertson 1996)

Country	Korea	Korea	Greece	China	Ecuador	Pakistan	South Africa	Sweden
Doctor	Min	Churl Cho	Koumoula	Zhang Shi	Alarcon	Hussain	Temlett	Korsgaard
No. of GTS	157	142	24	450	30	10	115	120
Male (%)	80	82	88	83	73	90	76	75
Coprolalia (%)	–	16	63	30	43	100	32	4
Copropraxia (%)	–	–	46	8	33	60	12	4
Echolalia (%)	–	10	33	10	37	100	17	8
Echopraxia (%)	–	1	–	12	27	60	17	8
ADHD (%)	72	33	–	43	50	–	10	42
OCB (%)	52	36	–	32	47	100	32	42
SIB (%)	–	11	–	7	53	–	–	2

Clinical Correlates of Tourette's Disorder Across Cultures: A Comparative Study Between the United Arab Emirates and the United Kingdom

Valsamma Eapen, Ph.D., F.R.C.Psych., F.R.A.N.Z.C.P.;
and Mary M. Robertson, M.D., D.Sc., F.R.C.P. (U.K.), F.R.C.P.C.H., F.R.C.Psych.

Prim Care Companion J Clin Psychiatry 2008;10(2)

Table 1. Clinical Characteristics of Tourette's Disorder Patients in the Current Study Compared to Worldwide Data

Characteristic	United Kingdom (N = 35)	United Arab Emirates (N = 35)	Worldwide[a]
Male-female ratio	2.9:1	2.5:1	3:1
Age at onset, mean, y	6.0	6.4	7.2
	N (%)	N (%)	%
First tic: eye or face	18 (51.4)	20 (57.1)	NA
Facial tics	35 (100)	35 (100)	91
Limb tics	31 (88)	25 (72)	78
Complex motor tics	5 (14.3)	3 (8.6)	68
Coprolalia	9 (25.7)	3 (8.6)	10–30
Copropraxia	4 (11.4)	1 (2.9)	2–21
Echolalia	15 (42.9)	13 (37.1)	20–45
Self-injurious behavior	10 (28.6)	6 (17.1)	NA
Aggression	7 (20.0)	1 (2.9)	NA
Obsessive-compulsive behavior	15 (42.9)	13 (37.1)	28–50
ADHD symptoms	21 (60.0)	24 (68.6)	35–65
Oppositional defiant disorder	19 (54.3)	4 (11.4)	NA
Conduct disorder	7 (20.0)	2 (5.7)	NA

[a]Data from Bruun.[29]
Abbreviations: ADHD = attention-deficit/hyperactivity disorder, NA = not applicable.

Epidemiology of Functional Neurological Disorder: The Clinical Spectrum

Emma Woo[1], Gabriela S. Gilmour[1,2]

Semin Neurol 2026; 46: 134–141 DOI 10.1055/a-2753-9092

Social and cultural influence:

- In the US, incidence of FND in veteran populations 3x higher than in the general population
- FND as “toxic neurasthenia” post-World War II
- FND as “nervous break-down” in response to vaccinations

Table 1 Biopsychosocial framework for understanding FND risk factors and comorbidities

Factors	Examples
Biological	• Female sex • Medical comorbidity • Neurological comorbidity (e.g., migraine, benign paroxysmal positional vertigo, multiple sclerosis, epilepsy) • Neurodegenerative disorders (i.e., Parkinson’s Disease, Dementia with Lewy Bodies) • Neurodevelopmental disorders (i.e., Autism spectrum disorder, Attention deficit hyperactivity disorder) • Hypermobile Ehlers–Danlos Syndrome and hypermobile spectrum disorders • Functional syndromes (i.e., autonomic, pain, gastrointestinal, urogenital) • Genetic predisposition
Psychological	• Psychiatric disorders (e.g., anxiety, depression, posttraumatic stress disorder) • Personality traits • Attachment/coping style
Social	• Sexual and gender minorities • Childhood mistreatment, particularly neglect • War veterans • Cultural phenomena • Socio-economic

Dealing with the unknown. Functional neurological disorder (FND) and the conversion of cultural meaning

Maddalena Canna*, Rebecca Seligman

Social Science & Medicine 246 (2020) 112725

Highlights

- Novel framework for understanding Functional Neurological Disorders (FNDs).
- FNDs are scaffolded by cultural models and the encultured body.
- Cultural meanings, stress, trauma and stigma shape functional symptoms.
- Patients with functional neurological disorder feel misunderstood and misdiagnosed.
- Culturally aware approaches are needed for improving the quality of care.

4.) MOST COMMON “COPROLALIC” WORDS”

Coprolalia in different languages

(modified according to Singer, 1997)

USA	England	Hong Kong	Japan	Denmark	Spain	Germany
Fuck	Fuck	Tiu	Kusobata	Kaeft	Puta	Fuck
Shit	Shit	Shui	Chikusho	Svin	Mierda	Ficken
Bitch	Bastard	Tiu Ma	Omanko	Fisse	Coño	Scheiße
Ass(Hole)	Piss	Tiu So		Kusse	Joder	Shit
Bastard	Sod			Pik	Maricon	Arsch
Pussy	Cock			Rov	Cojones	Arschloch
Prick, Dick, Cock	Cunt			Pis	Hijo De Puta	Titten
Cunt				Gylle	Hostia	Hure
Fart				Sgu		Fotze
Nigger				Lort		Wichser

LEX•I•CON VALLEY | A BLOG ABOUT LANGUAGE | SEPT. 11 2013 2:24 PM

The Most Popular Swear Words on Facebook

By Chris Kirk

Popularity of Select Profanities by Gender

	Both	Male	Female
1	shit	shit	shit
2	fuck	fuck	fuck
3	damn	damn	damn
4	bitch	bitch	bitch
5	crap	crap	crap
6	piss	dick	piss
7	dick	piss	darn
8	darn	pussy	dick
9	cock	fag	cock
10	pussy	asshole	asshole
11	asshole	cock	pussy
12	fag	bastard	fag
13	bastard	darn	bastard
14	slut	douche	slut
15	douche	slut	douche

Source: Facebook Keywords Insights API, from from midnight Sep. 2, 2013 to midnight Sep. 6, 2013. For each word, the rank reflects its mention counts relative to the other words in the table.

5.) FREQUENCIES OF COPROLALIA AND COPROPRAXIA

Coprophenomena in Tourette syndrome

ROGER D FREEMAN MD[1] | SAMUEL H ZINNER MD[2] | KIRSTEN R MÜLLER-VAHL MD PHD[3] |
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Developmental Medicine & Child Neurology 2009, 51: 218–227

- Overall prevalence of coprophenomena: 19.3%
  - Children: 17.6%
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  - Children: 5.8%
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N=597

- In 11% of those with coprolalia and 12% of those with copropraxia these coprophenomena were one of the initial symptoms of Tourette syndrome.

frontiers in Neuroscience

ORIGINAL RESEARCH
published: 12 September 2016
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New Insights into Clinical Characteristics of Gilles de la Tourette Syndrome: Findings in 1032 Patients from a Single German Center

Tanvi Sambrani[1,2], Ewgeni Jakubovski[2] and Kirsten R. Müller-Vahl[2]*

Coprophenomena	28.1% (n=290)
Coprolalia	**24%** (n=247)
Copropraxia	**15.5%** (n=160)

TABLE 5 | Tic severity* depending on presence (±) of certain complex tics.

Complex tic		*N*	Mean STSS-GSR	*SD*	Std. error	*t*-value	Significance
Coprophenomena	+	278	3.36	1.255	0.075	−10.093	$p < 0.001$
	−	721	2.57	1.052	0.039		
Coprolalia	+	239	3.46	1.262	0.082	−10.742	$p < 0.001$
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**according to STSS-GSR.*
STSS-GSR, Global Severity Rating of the Shapiro Tourette-Syndrome Severity Scale; N, number of cases; SD, standard deviation; Std., Standard.

The Phenomenology of Tics in Adults: Data From the Calgary and Paris Adult Tic Disorders Registry

European Journal of Neurology, 2025; 32:e70252
https://doi.org/10.1111/ene.70252

Christelle Nilles[1] | Yulia Worbe[2,3,4] | Andreas Hartmann[2,5] | Davide Martino[6] | Julian Fletcher[6] | Naoual Serari[5] | Catherine Deans[6] | Isabella Davenport[6] | Emmanuel Roze[3,5] | Tamara Pringsheim[6]

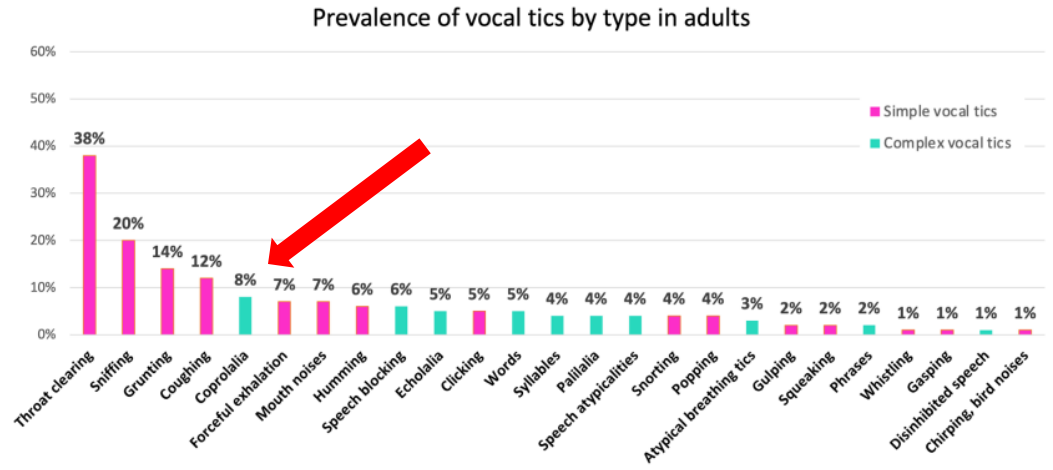

FIGURE 2 | Prevalence of vocal tics by type.

N=227

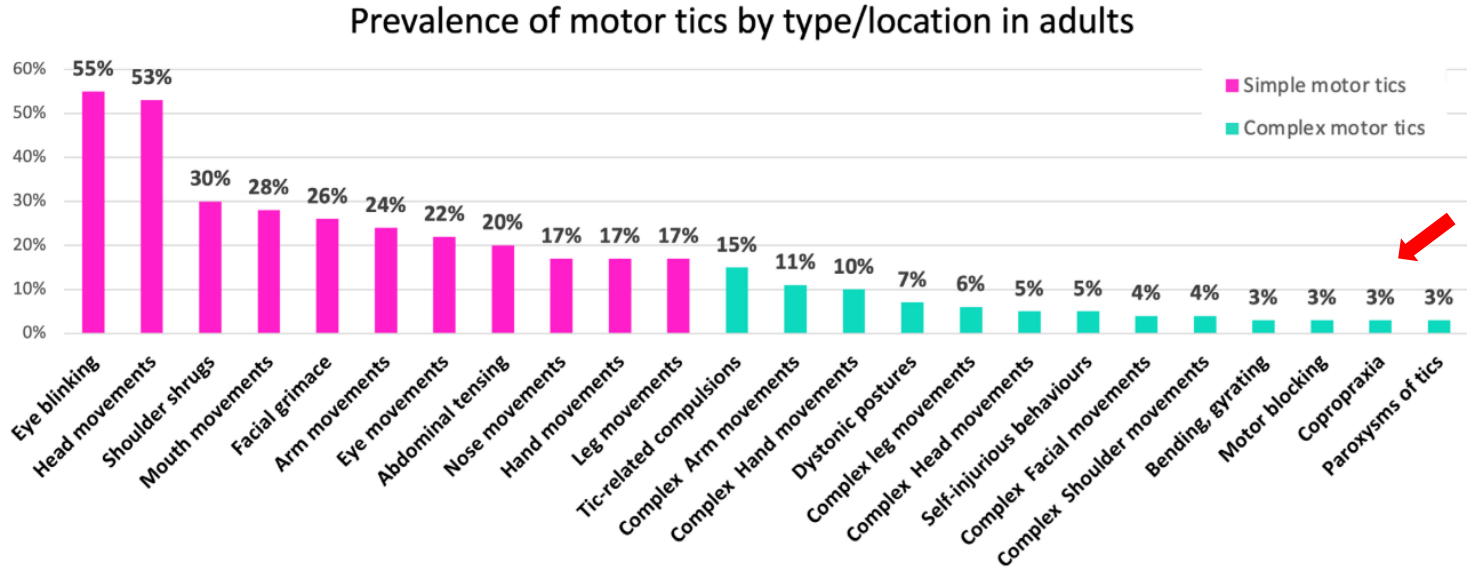

FIGURE 1 | Prevalence of motor tics by type.

6.) ASSOCIATION WITH OTHER CLINICAL SYMPTOMS

Coprophenomena in Tourette syndrome

ROGER D FREEMAN MD[1] | SAMUEL H ZINNER MD[2] | KIRSTEN R MÜLLER-VAHL MD PHD[3] |
DIANE K FAST MD PHD[1] | LARRY J BURD PHD[4] | YUKIKO KANO MD PHD[5] | ARIBERT ROTHENBERGER MD[6] |
VEIT ROESSNER MD[6] | JACOB KERBESHIAN MD[4] | JEREMY S STERN MB, BCHIR[7]

Developmental Medicine & Child Neurology 2009, 51: 218–227

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- "Copropraxia ever": 5.7%
  - Children: 5.8%
  - Adults: 5.5%

N=597

- **The most robust associations of coprophenomena were with the number of non-tic repetitive behaviors, spitting, and inappropriate sexual behavior.**

frontiers in Neuroscience

ORIGINAL RESEARCH
published: 12 September 2016
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Tanvi Sambrani[1,2], Ewgeni Jakubovski[2] and Kirsten R. Müller-Vahl[2]*

- significant association between coprophenomena and comorbidity score (X2=126.823; p < 0.001)
- coprophenomena were most highly associated with
  - **Self-injurious behavior (X2=60.302; p< 0.001)**
  - **Depression (X2=34.484; p<0.001)**
  - **Rage attacks (X2=33.800; p<0.001)**
  - ADHD (X2=30,856; p<0.001)
  - Anxiety (X2=27.122; p<0.001)
  - OCD (X2=17.341; p<0.001)
  - OCB (X2=13.551; p<0.001)

Association with other clinical Symptoms

Significant association between “complex phonic tics” and presence of trunk tics

Significant association between coprophenomenon and

- impulsive behavior
- rage outbursts
- intrusive behavior such as forced touching

Baizabal-Carvallo JF, Jankovic J. Simple and Complex Phonic Tics in Tourette Syndrome. Brain Sci 2025;15(6):620. https://doi.org/10.3390/brainsci15060620

Association between coprolalia and

- self-injurious behaviors
- compulsions

Kano Y, Ohta M, Nagai Y. Differences in clinical characteristics between Tourette syndrome patients with and without “generalized tics” or coprolalia. Psychiatry Clin Neurosci 1997;51(6):357–361.

7.) NON-OBSCENE SOCIALLY INAPPROPRIATE BEHAVIORS (NOSIS)

Non-obscene Complex Socially Inappropriate Behavior in Tourette's Syndrome

(The Journal of Neuropsychiatry and Clinical Neurosciences 1996; 8:311–317)

Roger Kurlan, M.D.
Christine Daragjati, B.A.
Peter G. Como, Ph.D.
Michael P. McDermott, Ph.D.
Kimberly S. Trinidad, M.D.
Sarah Roddy, M.D.
Christine A. Brower, B.S.
Mary M. Robertson, M.D., F.R.C.Psych.

Defined as "socially inappropriate behaviors such as insulting others, making other socially inappropriate comments, and socially inappropriate actions"

the murder, resulting in prolonged legal problems. The patient described "an urge to say exactly the most inappropriate comment possible" in a variety of settings. The

TABLE 1. Non-obscene socially inappropriate (SI) behavior ($N = 87$)

Variable	Percentage Reporting		
	Insults	Other SI Comments	SI Actions
Subjects reporting behavior	22	5	14
Subjects reporting urge	30	26	22
Frequency of urge			
Daily	43	29	31
Weekly	19	24	31
Monthly	5	5	8
Rarely	33	43	31
Social problems resulting from behavior			
Arguments	30	17	17
School problems	21	13	13
Fistfights	13	8	7
Job problems	9	6	5
Removal from public place	8	6	6
Legal trouble, arrest	5	2	6
Behavior directed at			
Family member	31	35	28
Familiar person	36	34	30
Stranger	17	19	19
Setting			
Familiar setting (e.g., work, school)	40	34	32
Home	37	33	29
Public setting (e.g., restaurant, bus)	20	20	21

On being your own worst enemy: An investigation of socially inappropriate symptoms in Tourette syndrome

Clare M. Eddy [a,b,*], Andrea E. Cavanna [a,c]

Journal of Psychiatric Research 47 (2013) 1259–1263

Table 1
Characteristics of NOSIS in 40 patients with Tourette syndrome.

Type	Insults (26/60 = 43.4% of total sample)	Other remarks (23/60 = 38.4% of total sample)	Actions (30/60 = 50% of total sample)
Subtypes and examples	50% of those reporting urges to insult claimed to experience all of the following types: insults about height, weight, race, physical appearance, intelligence and body odor. Less common examples included remarks about accents, clothes, jobs, names and disabilities.	Examples: urges to shout 'bomb', 'swine flu', 'Taliban', or 'I've got a gun', urges to shout criticism about the food in a restaurant, or to make offensive remarks during a radio broadcast or public speech.	30% of the subgroup reporting action urges experienced both sexual and non-sexual related urges, 63% only non-sexual, and 7% only sexual. Examples: urges to throw a chair in church, kiss the teacher, pull faces through windows, break children's toys.
Problems	35% no problem, 39% school/job problems, 65% arguments, 15% legal trouble	52% no problem, 48% problems at school, work, verbal arguments	47% no problem, 40% arguments, 33% school or job problem, 13% physical confrontation
Environment	69% towards any person, 15% not family, 15% not strangers	61% in any location, 17% home or familiar location, 13% not at home, 9% only familiar places	53% in any location, 17% at home or familiar place, 20% not at home

NOTE: Sum of percentages is not always 100 as categories are not always mutually exclusive.

Functional tic-like Behaviors (FTLB)

TABLE 1 First round of Delphi process statements and results

Item	Median (interquartile range)	Modifications to prepare for second round
(d) Vocal tic-like behaviours include several words and statements, including context-dependent and offensive words/statements	9 (8,9)	No change

European Society for the Study of Tourette Syndrome 2022 criteria for clinical diagnosis of functional tic-like behaviours: International consensus from experts in tic disorders

Tamara Pringsheim[1] | Christos Ganos[2] | Christelle Nilles[1] | Andrea E. Cavanna[3,4,5] | Donald L. Gilbert[6,7] | Erica Greenberg[8] | Andreas Hartmann[9] | Tammy Hedderly[10] | Isobel Heyman[11] | Holan Liang[11] | Irene Malaty[12] | Osman Malik[13] | Nanette Mol Debes[14,15] | Kirsten Muller Vahl[16] | Alexander Munchau[17] | Tara Murphy[11] | Peter Nagy[18] | Tamsin Owen[10] | Renata Rizzo[19] | Liselotte Skov[20] | Jeremy Stern[21] | Natalia Szejko[22] | Yulia Worbe[23] | Davide Martino[1]

Eur J Neurol. 2023;30:902–910.

Summary

Why is there such a wide range of corpolalia in the literature?

Why is coprolalia more common in people >12 years, when tics typically decrease at that age?

Why are there cross-cultural differences in coprolalia, but not in other types of tics, when coprolalia is a tic?

Why calling swear words a symptom of a disease, when most often used words are identical to generally used swear words?

Why is coprolalia more common (range, 4-74%) than copropraxia (range, 2-25%) when generally motor tics are more commen than vocal tics?

How to explain the association between coprolalia and spitting, self- injurious behavior, non-tic repetitive behaviors, trunk tics, rage attacks, and inappropriate sexual behavior, when coprolalia is a tic?

How to differentiate between NOSIS and utterances in FTLB?

Neurodevelopmental Tics with Co-Morbid Functional Tic-like Behaviors: Diagnostic Challenges of a Complex Tourette Syndrome Phenotype

Andrea Eugenio Cavanna [1,2,3,4,5,6,*], Virginia Caimi [5,6], Elisa Capriolo [5,6], Matteo Marinoni [5,6], Gabriele Arienti [5,6], Anna Riva [5,6], Renata Nacinovich [5,6] and Stefano Seri [3]

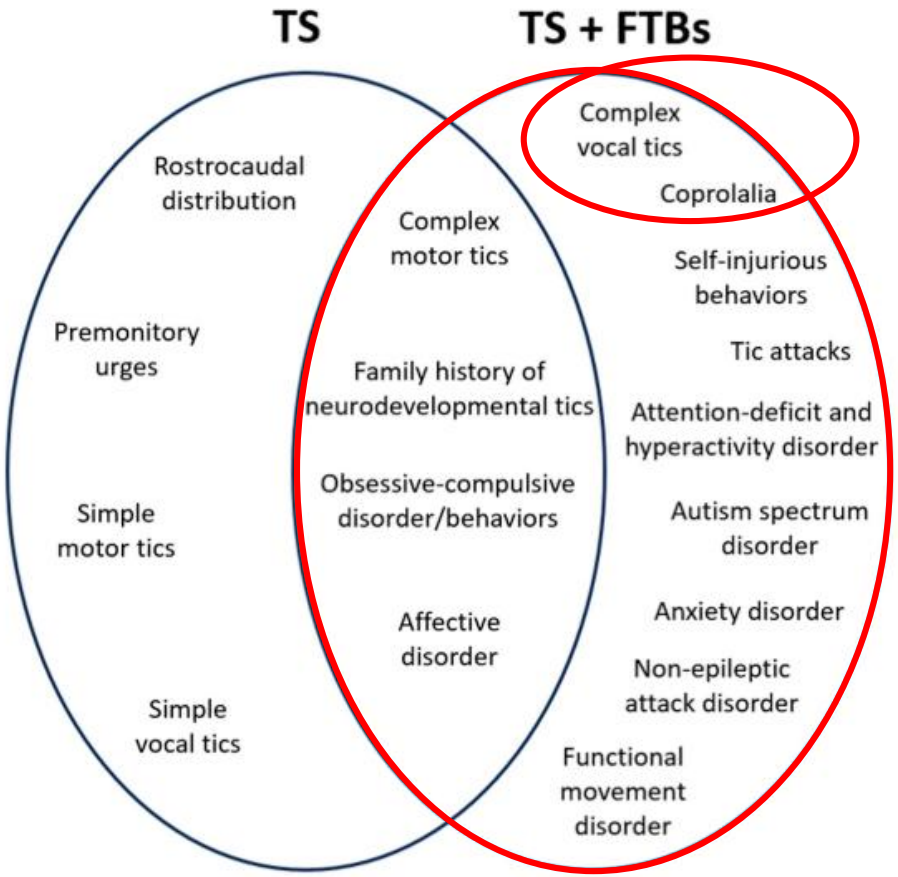

Figure 1. Clinical characteristics of Tourette syndrome (TS) with and without functional tic-like behaviors (FTBs).