

Tourette Syndrome Workshop
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- Definition and Epidemiology
- Diagnosis and Assessment
- Psychopharmacological Treatment
- New Directions in Treatment

TS Diagnosis

- TS = enduring pattern of motor and phonic tics
- No diagnostic test for TS
- Diagnosis is based on history & observation

→ Implications

- Listen
- Watch
- Listen

Swearing is not required for diagnosis

Epidemiology of TS: Conclusions

- Prevalence of TS is influenced by diagnostic threshold (subject to historical trends)
- Moderate to severe TS affects 1 to 6 per 1000 in school-age children
- Subthreshold variants are common and may be associated with impairment (? due to comorbid condition)
- Public health perspective → source of disability may not be important (tics as a marker)
- Neurobiological perspective → subthreshold variants may not be etiologically related

Garden Variety – Unambiguous Motor Tics

- Eye blinking, eye movements
- Facial grimacing
- Jaw movement
- Head jerking
- Neck stretching
- Shrugging
- Arm jerking
- Abdominal tensing

Complex Motor Tics

- Spitting
- Arm thrusting
- Body bending/twisting
- Leg kicking
- Hopping or Skipping
- Combinations (arm jerk + grimace + head jerk)
- Obscene gestures (middle finger, crotch grabbing)
- Touching, tapping

Garden Variety – Unambiguous Phonic Tics

- Throat clearing
- Grunting
- Snorting
- Coughing
- Hooting
- Chirping
- Shouts
- Barking

Complex Phonic Tics

- Words/parts of words (“Hi” “yeah” “din” “bacon” “Sh”)
- Short Phrases (“you bet” “oh boy” “no way”)
- Chuckling, carnival laugh
- Breathing tics
- Kissing
- Combination tics (grunt + shrug + head jerk)
- Inappropriate words (curses, body parts, racial slurs)

Tourette syndrome: Onset & Course

- Motor tics: typical onset = 5 to 7 years
- Phonic tics: typical onset = 7 to 9 years
- Tics occur in bouts
- By age 10: most patients report premonitory sensations or urges
- Tics are suppressible to a limited degree
- Tics tend to decline with age

TS: Sources of Impairment

- Tics
 - If mild → minimal interference
 - If moderate or greater
 - May be bothersome (premonitory urges, suppressing tics, frustration)
 - May interfere with daily activities (speech)
 - May be noticed by others (source of teasing & social isolation)

TS: Not just tics


- Children with TS from clinics* may show:
 - Impulsiveness
 - Distractibility
 - Hyperactivity
 - Oppositional & defiant behavior
 - Repetitive behaviors
 - Low frustration tolerance & explosive outbursts
 - Anxiety & depressed mood
 - Learning problems

Community samples too

Tourette Syndrome: Clinical Picture

- 50% to 66% of children with TS have ADHD in clinical settings
- 50% have obsessive-compulsive symptoms
- 30% have obsessive-compulsive disorder
- TS + ADHD → ↑ impairment than TS alone
- TS + OCD → ↑ impairment than TS alone

TS: Sources of Impairment

- Associated behavioral problems (ADHD)
 - Poor impulse control
 - ➔ Social failure
 - ➔ Disruptive
 - ➔ Aggression
 - Inattention
 - ➔ school failure
 - Explosive behavior (more often home than school)
 - ➔ Strain on family life
- cast as a *troublemaker*
- 

Sources of Impairment in OCD

- Associated behavioral problems (OCD)
 - Anxiety
 - ➔ Social failure (due to avoidance)
 - ➔ Disruptive (if prevented from ritualized behavior)
 - ➔ Aggression
 - Inattention (distracted by worries and rituals)
 - ➔ school failure
 - Explosive behavior (more often home than school)
 - ➔ Strain on family life

TS Facts for Families: Take Home 1

- Tics range from mild to severe
- All problems are not due to tics
- Treating tics is not a cure
- Exacerbations are expected
 - regardless of severity, treated & untreated patients
 - 1-3 per year, lasting 6-8 weeks
 - following exacerbation, tics subside (with or without intervention)
 - implications → mild tics may not need Rx
 - don't treat mild increases

TS Facts for Families: Take Home 2

- TS tends to be chronic – but not progressive
- Tics ↓ late teen age years
- ADHD, OCD, disruptive behavior are common
 - may be greater source of impairment than tics
 - may not decline with age
 - may not be related to tic severity

Approach To Treatment of Disruptive Behavioral Problems

Parent Training in TS: Rationale

- Tics are involuntary,
- Behavioral problems (e.g., impulsiveness, aggression, arguing, poor frustration tolerance, non-compliance) are **not**
- The presence of involuntary tics may undermine parental competence → inconsistent parenting
- Children with TS may need *Industrial Strength* parenting

Parent Management Training (PMT)

- Training parents to alter the child's behavior at home
- Based on classical principles of behavior modification
- First applied in 1960s and 70s
- Several studies show that PMT is effective
- Treatment manuals are available
- Has not been tried in TS

Question:

Is disruptive behavior in TS different
than disruptive behavior
in children without TS?

Behavioral Problems in Children with TS

- Noncompliance with daily activities
- Oppositional behavior
 - Arguing with adults
 - Defying rules
- Impulsiveness/Hyperactivity
- Socially inappropriate behavior
 - Overly familiar with strangers
 - Self-exposure
- Aggression

Case #1: Target Problem #1

<u>Problem Statement</u>	<u>Frequency/ Intensity</u>	<u>Impact</u>
Actively defies rules	daily, several times/day; won't follow instructions. "If I say white, he says black."	family in turmoil; uncertain about how to deal with it. He gets his way when he shouldn't

Case #2: Target Problem #2

<u>Problem Statement</u>	<u>Frequency/ Intensity</u>	<u>Impact</u>
Meltdowns	5-7 per day; yells, screams, throws objects; last from 5 to 30 minutes. Occurs at home and school.	Mother puts no expectations on him; “he runs the family” Occasional property destruction (he threw his shoe last week and broke a window).

Case #3: Target Problem #1

<u>Problem Statement</u>	<u>Frequency/ Intensity</u>	<u>Impact</u>
Arguing with adults	Up to 10-15 times a day; won't listen, Won't let go - says things aren't fair. Occurs at home and at school – more frequent at home.	Mother avoids conflict. Doesn't set limits –when she knows she should. Other times, parents are too strict - mother later regrets.

Case #3: Target Problem #3

<u>Problem Statement</u>	<u>Frequency/ Intensity</u>	<u>Impact</u>
Too easily Frustrated	Near constant. Screams, demands to have it her way. May calm down - then gets angry all over again.	Family on edge - tries to prevent her from getting angry. She gets in trouble at school and has few friends.

Case #4: Target Problem #1

<u>Problem Statement</u>	<u>Frequency/ Intensity</u>	<u>Impact</u>
Always Argues	near constant; openly defies rules; arguing often comes with yelling, swearing. threats, banging objects tipping furniture; sometimes hitting mother or sister.	Home life is unpredictable. “I try “to set some rules- but he just doesn’t care.” Mother is exhausted. She gets weekly calls from the teacher - feels powerless.

Behavior Therapy: Basics

- Identify antecedents and consequences (behavior may have different functions based on setting)
- Environmental manipulation (to reduce/manage the triggering situation)
- Extinction (ignoring unwanted behavior)
- Reinforcement-based strategies
- Use of mild punishment
(eg, loss of privilege and time out)

Behavior Therapy: Basics

- Functions of maladaptive behavior
 - Tangible (to obtain a specific object)
 - Escape from routine demands
 - Overreaction to sensory stimuli (eg, sound, tactile)
 - Environmental demand to stop a self-selected *preferred* behavior

Frequently Used and Misused Terms

- Reinforcement – anything that increases a behavior; behavior is shaped by consequences
- Positive reinforcement* – receiving a reward after the occurrence of the desired behavior
- Negative reinforcement* – removal of an aversive stimulus after the occurrence of the desired behavior
- Punishment – aimed at reducing the frequency of a specific behavior

** Aimed at increasing the behavior*

PMT: Basics

- 10 weekly sessions to parent(s) – child is not present
- Regular homework assignments
- Education about “why children misbehave”
- Giving effective commands
- Use of token system
- Effective discipline
- Managing behavior in public places

Behavior Therapy in TS: Conclusions

- Behavioral problems in TS are not unique
- Inadequate dissemination of effective techniques in TS
- Inadequate testing in large samples with appropriate control group
- Little or no information on combination of behavior therapy and medication
- More study needed

PMT in TS: Subjects

- N = 24
- 18 with TS; 6 with CTD
- Mean age (SD) = 8.9 (2.0)
- 18 boys, 6 girls
- Mean YGTSS (SD) = 18.2 (8.7)
- Mean IQ (SD) = 109
- ODD = 20; ADHD=10; OCD=4
- 21 (87.5%) were taking medication

PMT in TS: Results

PMT ($n = 12$)

TAU ($n = 12$)

	BL	EP	BL	EP	<i>p</i>
	\bar{X} (SD)	\bar{X} (SD)	\bar{X} (SD)	\bar{X} (SD)	
DBRS	16.5 (4.03)	8.2 (4.75)	15.6 (3.37)	12.5 (6.64)	< .05
YGTSS	17.2 (6.57)	15.4 (7.28)	18.4 (10.62)	14.9 (9.59)	.49
CGI-I (< 3)	7/11 (63.6%)		2/12 (16.7%)		< .05

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Thank you

- 1) Principles of Behavior Management; 2) Prevention; 3) Positive Attention; 4) Reinforcement; 5) Compliance; 6) Consequences; 7) Functional Communications; 8) Teaching Skills; 9) Generalization & Maintenance.