

Clinical Presentation and Quality of Life Burden Associated with Hyperhidrosis in Children and Adolescents (Ages 6-18) and Young Adults (Ages 18-30)

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PURPOSE

- Primary focal hyperhidrosis is characterized by excessive and uncontrollable sweating beyond what is necessary for thermal regulation and affects an estimated 4.8% of the total U.S. population and approximately 2% of those under the age of 18¹
- The condition is associated with a significant quality of life burden; an online survey in the U.S. showed that ~17% of teens experienced excessive sweating, and nearly 75% reported their symptoms led to moderate or major daily impairment²
- Though onset typically occurs during childhood/adolescence, the impact of the disease in these patients is not well characterized
- Together with the International Hyperhidrosis Society (IHHS), this author team is engaged in a collaborative effort to characterize the patient experience in pediatric hyperhidrosis
- A quantitative survey was designed based on findings from previously completed qualitative research in a similar population³ to elucidate characteristics and burden of hyperhidrosis in a pediatric (children and adolescent) population, a patient subset that has not been adequately studied to date
- Here, we report key findings of both the qualitative and quantitative phases to characterize the experiences of pediatric sufferers of hyperhidrosis, including quality-of-life burden, and to share these findings with healthcare providers

KEY RESULTS

- Nearly all participants (97%) in the quantitative survey described sweating in multiple focal areas, with axillary and palmar sweating most frequently reported (**Figure 1**)
- Most children responses indicated moderate or severe sweating, with severity increasing by age and years since symptom onset (**Figure 2**)
- Mean anxiety (GAD-7) and depression (PHQ-9) scores were highest in quantitative survey participants who perceived their sweating as severe (**Figure 3**)

Figure 1. Prevalence of Focal Sweating in Pediatric Sufferers

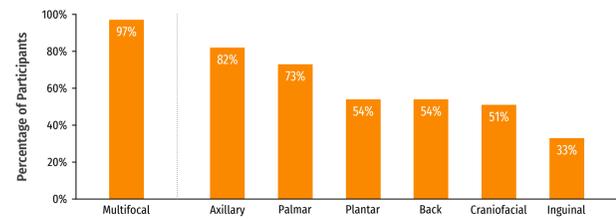


Figure 2. Sweating Severity by Age and Years Since Onset

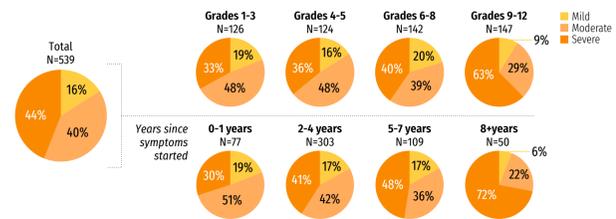
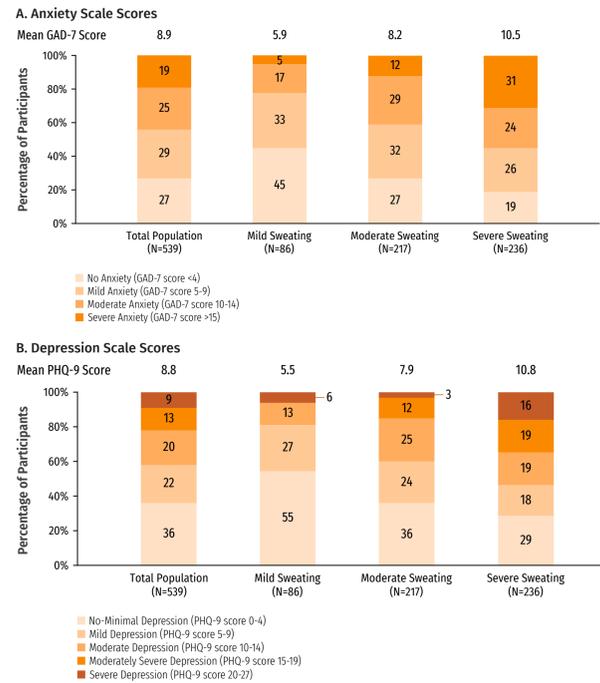


Figure 3. Anxiety and Depression Scores Increase with Sweating Severity



GAD-7, Generalized Anxiety Disorder 7; PHQ-9, Patient Health Questionnaire 9

- The qualitative focus group and interview data (n=40) revealed age-specific trends on quality of life burden, with stigma and social impact increasing with age (**Figure 4**)
 - Female participants were more likely than male counterparts to experience a high emotional burden due to self-esteem issues (e.g., concerns about appearance, limitations in clothing choices)

Figure 4. Quality of Life Impact Increases with Age

Domain Impacted	Grades 1-3	Grades 4-5	Grades 6-8	Grades 9-12	Post High School
Physical	✓	✓	✓	✓	✓
Functional	✓	✓	✓	✓	✓
Social	Limited	✓	✓	✓	✓
Emotional	Limited	Limited	✓	✓	✓
Financial	Limited	Limited	Limited	✓	✓

In Their Own Words

Representative Quotes
"There is a lot of sweat on my feet, my hands, my face and body."
"I don't like taking shoes off in front of a lot of people. It just wears me out, my feet are just gross."
"I check if anyone is around and hide it so that no one can see, make sure it's not obvious that I am sweating."
"When my feet are sweating and I don't have socks on it is hard to walk around and it feels like I am walking on water."
"When I try to answer something in class I have to find a different way of putting my hand up for hide-damp-arms... it's really awkward."
"I don't want to talk to my friends about it because I don't think they would understand."
"... what's going to happen if I come over there and I shake their hand, or they're going to want to go in for a hug... if I'm thinking about it, like leading up to it, that's the worst."
"My best friends, they crack a joke with me about it. They're like, 'You look gross' or whatever, 'She's sweaty'."
"I change my clothes multiple times a day so I can control everything - I did last night and today I've worn three different shirts and three different pairs of underwear because I just want to make sure I'm okay, yes, it's a self-conscious thing."
"I've got to have a desk job because I can't be sweating on people. That helps more, actually, because you don't have to interact with as many people."

CONCLUSIONS

- The quantitative study reported here is the first to examine characteristics of excessive sweating and the resulting burden in a pediatric population
- In the pediatric population completing the quantitative survey reported here, most respondents reported excessive sweating at multiple focal areas, which is an important and novel insight in this population
- Increased disease severity was associated with greater depression and anxiety
- Consistent with these results, a qualitative research phase preceded the quantitative survey and showed marked burden across multiple domains (functional, physical, social, emotional, and financial), with generally increasing burden as age progressed
 - This 'by age' phenomenon is being further investigated based on the quantitative survey data with results forthcoming
- Findings reported here provide valuable insights into the unmet needs and experiences of pediatric sufferers of primary hyperhidrosis, a population that is currently understudied

REFERENCES

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- Hebert A, et al. Late-breaker oral presentation at the 75th Annual Meeting of the American Academy of Dermatology; 2017; Orlando, FL.
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ACKNOWLEDGEMENTS

This study was funded by Dermira, Inc., a wholly-owned subsidiary of Eli Lilly and Company. Medical writing support was provided by Prescott Medical Communications Group (Chicago, IL). All costs associated with development of this poster were funded by Dermira, Inc., a wholly-owned subsidiary of Eli Lilly and Company.

METHODS

Qualitative Study

Study Design & Participants

- A deductive qualitative design with in-depth, in-person interviews (children ages 6-13 and caregivers [n=25]) as well as in-person small focus groups (adolescents 14-17 years [n=7] and young adults 18-30 years [n=8]) was used
- A total of 40 respondents were recruited through a third-party market research panel and the IHHS
- Participants were identified via targeted screening criteria to establish presence of excessive sweating, including a clinical diagnosis of moderate-to-severe hyperhidrosis, self-identification of excessive sweating, or identification of likely hyperhidrosis via screening questions

Data Collection

- Data were collected during 90-minute interviews or small focus groups conducted in September 2019 in Houston, Texas and Atlanta, Georgia
- Professional moderators led the discussion to understand emotions, perceptions, and adjustments made regarding living with hyperhidrosis; impact was measured across life domains (physical, functional, social, emotional, and financial)
- Interviews and focus groups were recorded and transcribed for subsequent content, linguistic, and thematic analysis to identify and categorize topics, ideas, and patterns of meaning that were repeated

Quantitative Study

Study Design & Participants

- The 40-minute online survey was informed by the earlier qualitative interview and focus group data and was approved by an institutional review board

- Participants were recruited through a third-party market research panel and the IHHS, and targeted screening questions were used to identify excessive sweating consistent with hyperhidrosis
- For inclusion in the survey, participants were required to have experienced:
 - Sweating most of the time, or once/twice a week over the past 6 months
 - Sweating while awake, or awake and asleep
 - Moderate or major impairment due to sweating
 - Bilateral sweating
- Survey topics covered demographics and symptom characteristics, quality of life burden, and disease awareness

- Responses were collected for 539 children and adolescents aged 6-18 years (Grades 1-3, n=126; Grades 4-5, n=124; Grades 6-8, n=142; Grades 9-12, n=147), with caregivers required to provide responses for those aged 6-11 years with the child present (questions were catered to either the child or the caregiver, depending on who the respondent was)
- The average age of symptom onset was 8 years; approximately half of respondents were male and resided in urban areas, and most had insurance through a caregiver employer (**Table 1**)

Study Measures

- Sweating severity was determined using the Hyperhidrosis Disease Severity Scale (4-point scale); moderate and severe sweating were defined as a response score of 3 or 4 for any sweating region, respectively
- The General Anxiety Disease 7 (GAD-7) and Patient Health Questionnaire 9 (PHQ-9) questionnaires were embedded in the online survey to determine anxiety and depression scores, respectively

SUPPORTIVE RESULTS

Table 1. Participant Characteristics

		Quantitative Survey (N=539)
Male (%)		49%
Mean Age of Onset (years)		8
Grades	Grades 1-3	23%
	Grades 4-5	23%
	Grades 6-8	26%
	Grades 9-12	27%
	Insurance Status	Through Employer
Insurance Status	Children's Health Insurance Program	13%
	Medicaid	12%
	Other	7%
	Residential Area	Urban
Residential Area	Suburban	44%
	Rural	8%
	Severity	Mild
Severity	Moderate	40%
	Severe	44%