

**CONNECTICUT EARLY PSYCHOSIS
LEARNING HEALTH NETWORK**

Transforming Access, Care Quality, and Outcomes



Understanding and Addressing Negative Symptoms

Laura Yoviene Sykes, PhD
Maria Ferrara, MD, PhD



What are negative symptoms?

- **Negative Symptoms:** *reduction* or *loss* in an individual's typical functioning, perception or behavior
- They are transdiagnostic and occur in various diagnoses (e.g., depression, schizophrenia)
- 1 of the 5 “Criterion A” symptoms of schizophrenia (DSM-5)
- “Deficit syndrome” – predominantly negative symptom type of schizophrenia (Kirkpatrick et al., 2001)



Withdrawal

Distancing oneself from people or previously enjoyable activities

Negative Symptoms

- In FEP, at least 1 negative sx was present in 90% of patients and 35-70% continue to have clinically significant negative sx despite treatment (negative sx do not respond well to standard AP treatment) (an der Heiden, et al., 2016; Makinen et al., 2008)
- Of those with neg sx, 73% had negative sx before the onset of positive sx, and 20% within same month as positive sx (Correll & Schooler, et al., 2020)
- Associated with **worse functional outcomes** (than positive sx) (Brier et al, 1991; Milev, Ho, Arndt, & Andreasen 2005)
- Impairments in anticipating and remembering positive experiences (anticipatory anhedonia)– impacts goal-directed behavior

Negative Symptoms

a *reduction* or *loss* in an individual's typical functioning, perception or behavior

Diminished Expression

Blunted Affect

- Diminished facial and vocal expression
- Poor eye contact
- Minimal use of gestures

Alogia

- Short or monosyllable answers to questions
- Avoids communication
- Uses few words

Avolition/Apathy

Avolition

- Emotional withdrawal
- Apathy
- Poor hygiene
- Decreased involvement with formal roles (school/work)

Anhedonia

- Difficulty anticipating pleasure
- Few leisure activities
- Lack of interest in sexual activity

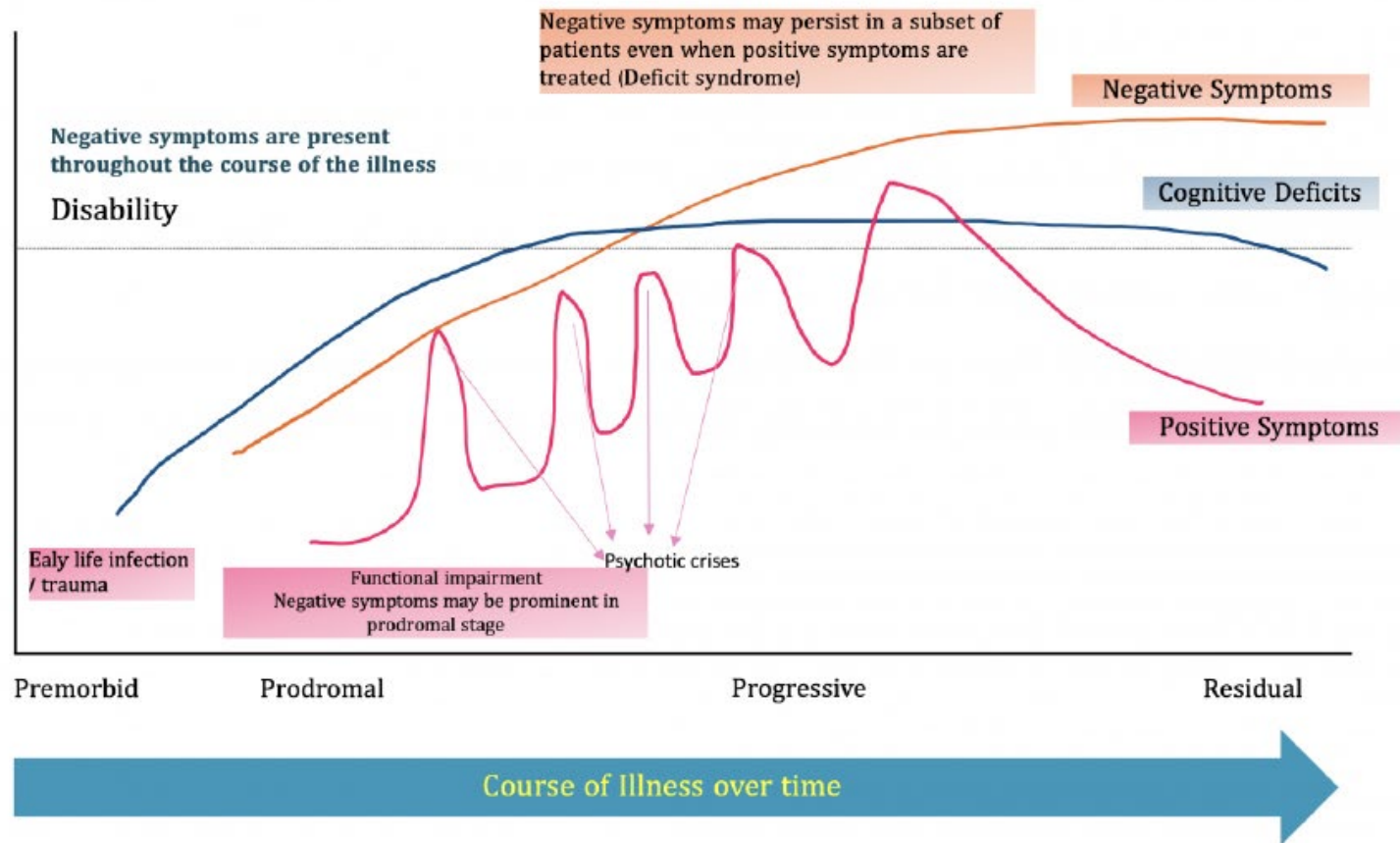
Asociality

- Few friends / poor relationships
- Lack of motivation for relationships
- Reduced social interaction

Course of Negative Symptoms in Schizophrenia



Worse
↑
Illness Severity



Correll, Christoph U., and Nina R. Schooler. "Negative symptoms in schizophrenia: a review and clinical guide for recognition, assessment, and treatment." *Neuropsychiatric disease and treatment* 16 (2020): 519.

Millan M et al, Negative symptoms of schizophrenia: Clinical characteristics, pathophysiological substrates, experimental models and prospects for improved treatment. *Eur Neuropsychopharmacol.* 2014; 24(5):645-692.

Secondary Negative Symptoms

- **Psychiatric Factors:**
 - Positive symptoms, hallucinations, paranoia
 - Depression
 - Anxiety
 - OCD
 - PTSD
 - Substance misuse
 - Dementia
- **Medical Comorbidities**
 - Huntington's disease, MS, Parkinson's, TBIs, chronic pain, sleep apnea, temporal lobe epilepsy
- **Environmental:**
 - environmental deprivation, under-stimulation, response to stigma
- **Medication-Related Factors:**
 - Antipsychotic related sedation, EPS, amotivation, suspicious withdrawal
- **Chronic Insomnia***

Explanations for Negative Symptoms

- **Common myths:**
 - The person is being lazy
 - Just due to medication side effects
 - The person just doesn't care anymore
- **Neurobiological:** (Millian, et al., 2014)
 - Disruptions in various pathways, including 3 circuits related to reward
 - Dopaminergic hypothesis: Hypo-dopaminergic signaling in PFC – strongly linked to deficits in anticipatory pleasure
- **CBT-p informed:** (NEOMED, ECHO)
 - Person may be overwhelmed by experiences
 - Person may struggle with emotion regulation (tend to suppress and avoid)
 - Person may have developed beliefs which interfere with action (demoralized, defeatist)

Explanations for Negative Symptoms

- **Cognitive Framework:** (Grant & Beck, 2009)

Negative sx arise and are maintained by dysfunctional beliefs that are a reaction to neurocognitive impairment and discouraging life events frequently experienced by folks with schizophrenia (Perivoliotis & Cather, 2009)

- Low expectancies for pleasure, success, and social acceptance
- Perception of limited resources, “I can’t read anymore, I have no concentration”
- “Defeatist” beliefs - “Better not to try than to try and fail” – lead to avoidance of productive and pleasurable activities

How to ask about negative symptoms

- What level of mood are you?
- How do you feel today?
- How do you spend a typical day?
- What do you do for fun?
- Have you had a chance to meet up with people outside of your family recently?

- Can systematically measure with:
 - [PANSS*](#)
 - SANS
 - BPRS
 - NSA-16

Interventions

Behavioral Activation

Attempt to increase the likelihood of engaging in positively reinforcing behaviors

- **Activity Monitoring and Scheduling:** help client to develop a schedule
 - Emphasis on **attempting** the task, not on successful completion
 - Schedule something (provide [pleasant event list](#), if needed)
 - Rate expected pleasure/accomplishment for the activity
 - Rate the actual pleasure/accomplishment after right after completing it
 - Goal is to help **re-establish a routine**
 - Start with the basics – e.g., consistent sleep, meals, hygiene
 - Gradual addition of pleasurable activities - e.g., going for coffee
 - Help to organize it in small steps with easiest first and progressing to more difficult



Activity Planning

- List 3 activities you enjoy and 3 responsibilities you need to address. Try to do one each day.

Activity (location, date, time)		Pleasure (0-10)	Achievement/Productivity (0-10)
	<i>Before</i>		
	<i>After</i>		
	<i>Before</i>		
	<i>After</i>		

Daily Check-in

Day of the Week: _____

Date: _____

My goal for today is (e.g. self-care, appointment, physical health, school, work, hobby, chore, errand, step towards a life goal, etc.):

My mood today is:

My physical health accomplishments/concerns for today are (e.g. exercise, food/water intake, weight, sickness, medications, sleep, etc.):

One thing I feel grateful for/optimistic about/am looking forward to today is:

Other thoughts/feelings/concerns/questions/interesting moments, etc.:

Handout # 4d: Pleasant Events

1. listening to music/radio
2. starting a new hobby (collecting something?)
3. drawing, doodling, and painting
4. taking a walk
5. going to the beach
6. bicycling along the strand
7. cutting pictures from magazines and making a collage
8. reading a book, magazine, or newspaper
9. going to the library and reading the newspaper in another language
10. looking through travel books in the library or a bookstore
11. cooking a nice meal
12. learning how to play an instrument
13. beginning a new physical fitness program
14. exercise (running, hiking, swimming, soccer?)
15. cleaning (room, kitchen, car?)
16. taking care of a pet (fish, dog, cat?)
17. gardening
18. going shopping for food and trying some new items
19. writing (a letter to someone, a poem or story?)
20. journaling
21. going out to eat
22. going for a drive
23. taking photographs
24. looking at pictures
25. making a gift for someone
26. doing a puzzle
27. playing cards
28. talking on the phone
29. going to a museum
30. going to the science center and/or the imax
31. soaking in the bathtub or hot tub
32. planning a family vacation
33. planning a fun and inexpensive outing with friends and then figuring out how to make it happen
34. going apple picking in the Fall
35. going surfing, boogie boarding, body surfing
36. saving money for a special trip or new gadget
37. assembling a model car or airplane
38. organizing a game night with friends
39. joining a gym
40. going swimming at the Y or another local pool
41. taking a karate, judo, or yoga class
42. thinking about some of the people in your life who really care about you
43. making a list of things you would like to do during your life time or places you would like to go
44. flying a kite
45. going on a picnic with a friend
46. having an interesting discussion with a friend
47. singing around the house
48. going camping
49. making a list of all the things you like about yourself
50. ice skating
51. sailing
52. surprising your parent(s) by making them breakfast
53. doing something kind for someone
54. playing tennis
55. going to a play or concert
56. going to a sporting event
57. playing with animals
58. Dancing
59. doing crossword puzzles or sudoku
60. Roast marshmallows over a fire
61. Go bowling
62. Doing woodworking
63. Read a joke book with friends
64. Starting a folder in which you save your best paper, tests, and teacher's comments
65. Thinking, "I did pretty well" after doing something
66. Drinking an ice cold glass of water
67. Reflecting on how I have improved and ways I would like to continue to improve
68. Working to develop a new skill of persona quality, such as patience, perseverance, organization, flexibility, good humor, etc
69. At the end of each day, ask your family members to talk about the funniest thing that happened at school or work
70. _____
71. _____
72. _____
73. _____

Goal Setting

- Focus on identifying **long-term goals** and then consider **small, incremental steps** to move toward them
- Explore client's **values** to generate interest in goals
 - E.g., [Bulls-eye worksheet](#), [Values card sort activity](#), magic wand question
- “**Internal Yardstick**” approach
 - “how to I measure up to myself now versus 2 weeks ago?”
 - as opposed to: “how do I measure up to my peers” or “myself before the illness”
- Expect set-backs, **recovery isn't linear** – adjust expectations based on clinical state
- Decrease pressure, resist the urge to push too hard (families, too!)



Intervention Strategies

- **Cognitive Behavioral Therapy**
 - Moderate effects (Elis et al., 2013; Jauhar et al., 2014; Klingberg et al., 2011)
 - challenge, alter defeatist beliefs and other generalized expectations of failure and discomfort in social situations
 - Cognitive restructuring, behavioral experiments to develop discrepancy / disconfirm distorted beliefs, acceptance-based strategies
 - Don't forget to educate and challenge family's beliefs, "he's just lazy" "doesn't want to get better"
- **Reminiscence skills** (Johnson, et al., 2013)
 - Attempt to cultivate positive emotions
 - "what was fun about it?"
 - "What surprised you"
 - "did you notice anything interesting?"

Functional Analysis of Negative Symptoms

Table 1
Functional Cognitive Behavioral Analysis of Negative Symptoms

Negative symptom	Beliefs	Behaviors	Possible benefits	Possible drawbacks
Anhedonia-Asociality	“It won’t be that much fun anyway.”	Does not engage in leisure or social activities	Resource-sparing; limits possibility of failure	Limits exposure to activities that are potential sources of enjoyment or sense of productivity
Avolition-Apathy	“I just don’t have the energy to follow through with it.”	Does not engage in effortful activity	Resource-sparing; limits possibility of feeling overly taxed; others’ expectations of him/her are low in terms of initiative	Limits exposure to activities that are potential sources of enjoyment or sense of productivity
Affective flattening	“It is better not to give too much away by showing emotion on my face.”	Blunted affect, decreased communication with others, loss of connection with his/her own emotions	Assists him/her to recede into the background; not draw others’ attention	Contributes to low level of social connectivity; others mistakenly assume individual has a muted affective experience
Alogia	“I don’t know what to say.” “I’m not going to say things right.”	Replies are brief and unelaborated	Others’ expectations of him/her are low in terms of conversation	Low levels of social connection; low self-efficacy regarding communication

Cognitive Formulation Examples

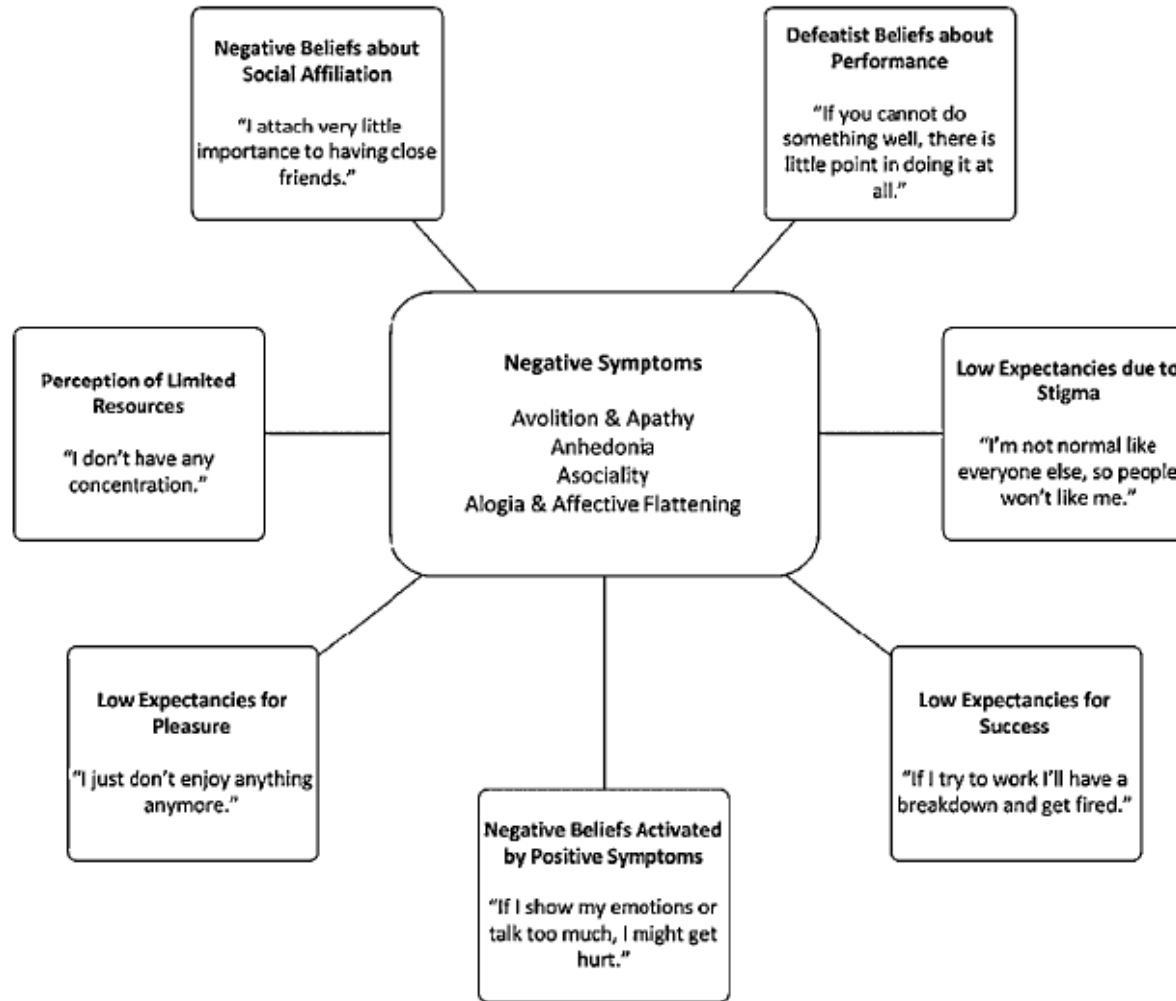
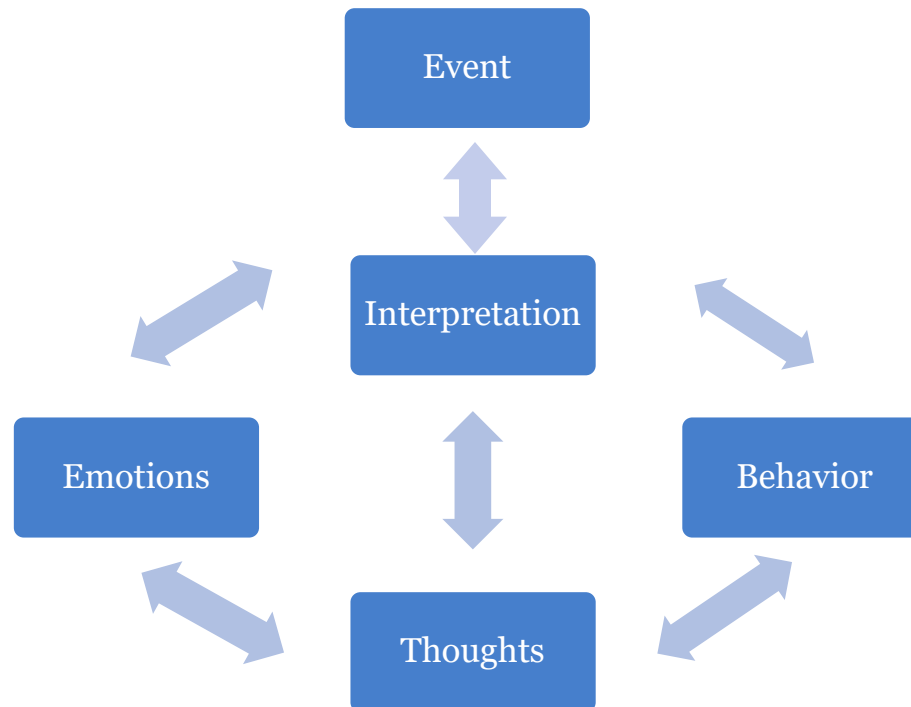


Figure 1. Cognitive case formulation of Kelly's negative symptoms.

Mini Formulation - CBTp



Closer look at some CBT strategies

Manage antecedents:

- Set an alarm, put it across room or in bathroom
- Have an activity planned

Getting out of bed
in the morning

Link to goals/values:

- Review list of reasons to get up on time (e.g., practice for job/school)

“Oh great, another
day of nothing – why
get up”

Sluggish, defeated

Goes back to bed for
several hours, only
wakes up to eat

Cognitive:

- collaborate to disconfirm maladaptive beliefs, restructure
- Acceptance-based “there my mind goes again telling me I can’t do anything”

“why can’t I be like
normal people, I’m so
sick of this illness and
these meds that make
me so sleepy, I can’t do
anything”

Activity Scheduling:

- Consistent wake-up, schedule meals
- Pleasant events and mastery-building activities

Additional Strategies – in session

- Therapist to be open and creative in using session
 - **Get active** – go for a mindful walk (check for sensory overload)
 - Model/teach/practice **simple coping strategies** for 5 minutes each session (breathing, grounding, imagery/savoring, body scan, gratitude, etc.)
 - Consolidate new learning through noticing changes before and after activity (HR, breathing, thoughts, emotions).
- Encourage client to take notes/create action plan in session
 - Helps with memory
 - Puts experience of session into own words
 - May help to challenge underlying negative thinking

Other Intervention Strategies

- General behavioral interventions – healthy lifestyle (exercise, sleep, nutrition, social engagement, smoking cessation)
- Connect to **supported education and employment** specialists
- **Social Skills/Social-Cognition Training** (Nordenoft et al, 2015; Granhom, McQuaid & Holden)
- **Cognitive Remediation Therapy** (Cella et al., 2017)
- **Brain stimulation (TMS, TDCS)** (Arango, et al., 2013; Micoulaud et al., 2015)

What about medications?

- Can use medications to treat secondary negative sx (e.g., depression, OCD)
- Currently, no FDA approved medications for primary negative sx in the US (*Amisulpride approved in Europe*)
 - Primary negative symptoms typically don't respond well to antipsychotic D2 antagonists or partial D2 agonists
 - Some evidence for targeting D3 receptors (cariprazine) (Nemeth et al., 2017)

Summary Tips

Table 2 Tips for Managing Negative Symptoms in the Clinic

Opportunities for Intervention	Actions to Take
Recognition	<p>After urgent symptoms are addressed, take time to focus exclusively on negative symptoms and signs</p> <p>Pay particular attention to the patient's level of interaction, interest, and engagement</p> <p>Evaluate body language, facial expressions, gestures, and eye contact</p> <p>Ask questions about the patient's daily activities and interactions, social activities inside and outside the family, work or school involvement, and pleasurable activities or hobbies</p> <p>Ask informants about the patient's normal daily behavior relevant to negative symptoms</p> <p>Consider administering the NSA-4 or another negative symptom assessment tool</p>
Assessment	<p>Assess affect and behavior that may suggest negative symptoms</p> <p>Assess psychiatric and medical comorbidities that may present as negative symptoms or aggravate negative symptom complaints</p> <p>Assess medication side effects that may present as negative symptoms or aggravate negative symptom complaints</p> <p>Gauge the level of impairment by comparing the patient to what would be expected from a healthy age- and sex-matched individual</p>
Management	<p>Optimize current medications to treat/maintain stability of psychotic (positive) symptoms</p> <p>Minimize medication side effects that may aggravate negative symptoms</p> <p>Consider medication adjustment or switch to medication with efficacy in treating negative symptoms</p> <p>Treat comorbid medical and psychiatric conditions if possible</p> <p>Refer to a specialist for treatment of a comorbid medical condition if necessary</p> <p>Refer to a psychologist for psychosocial intervention</p> <p>Encourage self-care, social interaction, and environmental stimulation</p>

Abbreviation: NSA-4, 4-item Negative Symptom Assessment.