WEBVTT

NOTE duration: ”01:07:16.309”

NOTE Confidence: 0.99690753

00:00:05.680 --> 00:00:06.980 Good afternoon, everyone.

NOTE Confidence: 0.97766113

00:00:09.360 --> 00:00:10.160 I wanna thank you all

NOTE Confidence: 0.97766113

00:00:10.160 --> 00:00:11.519 for attending this year's Grand

NOTE Confidence: 0.97766113

00:00:11.519 --> 00:00:13.280 Rounds t thirty two trainee

NOTE Confidence: 0.97766113

00:00:13.280 --> 00:00:13.780 presentation.

NOTE Confidence: 0.9642639

00:00:14.895 --> 00:00:16.454 We're really proud of our

NOTE Confidence: 0.9642639

00:00:16.454 --> 00:00:17.515 trainees this year.

NOTE Confidence: 0.98929036

00:00:19.335 --> 00:00:20.614 Oh, before I, I wanna

NOTE Confidence: 0.98929036

00:00:20.614 --> 00:00:22.535 mention there's the, the, sign

NOTE Confidence: 0.98929036

00:00:22.535 --> 00:00:23.735 in for CME credits on

NOTE Confidence: 0.98929036

00:00:23.735 --> 00:00:24.535 the screen now. So if

NOTE Confidence: 0.98929036

00:00:24.535 --> 00:00:25.895 you want CME credits, please,

NOTE Confidence: 0.98929036

00:00:26.135 --> 00:00:27.515 grab that while it's up.

NOTE Confidence: 0.96996164

00:00:32.610 --> 00:00:33.330 K. I'm going a little

NOTE Confidence: 0.96996164

00:00:33.330 --> 00:00:34.530 slower because I'm always frustrated

NOTE Confidence: 0.96996164

00:00:34.530 --> 00:00:35.810 when someone says do something,

NOTE Confidence: 0.96996164

00:00:35.810 --> 00:00:36.690 and then they they turn

NOTE Confidence: 0.96996164

00:00:36.690 --> 00:00:37.650 it off quickly. So you

NOTE Confidence: 0.96996164

00:00:37.650 --> 00:00:38.390 have that.

NOTE Confidence: 0.9916992

00:00:39.409 --> 00:00:39.909 So,

NOTE Confidence: 0.9688721

00:00:40.530 --> 00:00:41.810 our two thirty two is

NOTE Confidence: 0.9688721

00:00:41.810 --> 00:00:42.950 in its forty

NOTE Confidence: 0.96028644

00:00:44.005 --> 00:00:45.125 starting a forty second year

NOTE Confidence: 0.96028644

00:00:45.125 --> 00:00:46.965 this fall, renewed for another

NOTE Confidence: 0.96028644

00:00:46.965 --> 00:00:48.325 five years. We just finished

NOTE Confidence: 0.96028644

00:00:48.325 --> 00:00:49.305 this first year.

NOTE Confidence: 0.92749023

00:00:50.965 --> 00:00:51.925 And I'm,

NOTE Confidence: 0.98811847

00:00:52.805 --> 00:00:54.405 Michael Block and I, have

NOTE Confidence: 0.98811847

00:00:54.405 --> 00:00:55.685 have been working hard to

NOTE Confidence: 0.98811847

00:00:55.685 --> 00:00:57.545 to make this program grow.

NOTE Confidence: 0.9877711

00:00:58.130 --> 00:00:59.810 And, so one plug that

NOTE Confidence: 0.9877711

00:00:59.810 --> 00:01:00.610 I wanna give before I

NOTE Confidence: 0.9877711

00:01:00.610 --> 00:01:01.410 tell you about the trainees

NOTE Confidence: 0.9877711

00:01:01.410 --> 00:01:02.770 and about next week's presentation

NOTE Confidence: 0.9877711

00:01:02.770 --> 00:01:04.050 is that we also have

NOTE Confidence: 0.9877711

00:01:04.050 --> 00:01:05.010 many people who are not

NOTE Confidence: 0.9877711

00:01:05.010 --> 00:01:05.729 on the t thirty two

NOTE Confidence: 0.9877711

00:01:05.729 --> 00:01:06.530 or participate in the t

NOTE Confidence: 0.9877711

00:01:06.530 --> 00:01:07.250 thirty two. So if you

NOTE Confidence: 0.9877711

00:01:07.250 --> 00:01:08.450 have a postdoc who's on

NOTE Confidence: 0.9877711

00:01:08.450 --> 00:01:09.970 your r one grant or

NOTE Confidence: 0.9877711

00:01:09.970 --> 00:01:11.330 some other fellowship or an

NOTE Confidence: 0.9877711

00:01:11.330 --> 00:01:12.450 f thirty two or something

NOTE Confidence: 0.9877711

00:01:12.450 --> 00:01:13.065 like that,

NOTE Confidence: 0.90844727

00:01:13.944 --> 00:01:15.145 you know, with the the

NOTE Confidence: 0.90844727

00:01:15.145 --> 00:01:16.685 the cohorts that we grow,

NOTE Confidence: 0.98994756

00:01:17.705 --> 00:01:18.985 have a lot of benefit

NOTE Confidence: 0.98994756

00:01:18.985 --> 00:01:20.105 to all the trainees. So,

NOTE Confidence: 0.98994756

00:01:20.425 --> 00:01:21.225 you know, please know that

NOTE Confidence: 0.98994756

00:01:21.225 --> 00:01:22.345 that's there and available to

NOTE Confidence: 0.98994756

00:01:22.345 --> 00:01:22.845 you.

NOTE Confidence: 0.9951172

00:01:23.545 --> 00:01:24.045 So,

NOTE Confidence: 0.8601888

00:01:24.425 --> 00:01:25.785 next week's grand rounds is

NOTE Confidence: 0.8601888

00:01:25.785 --> 00:01:26.285 the,

NOTE Confidence: 0.71240234

00:01:27.709 --> 00:01:29.250 Viola Bernard lecture,

NOTE Confidence: 0.9941406

00:01:29.789 --> 00:01:30.289 and,

NOTE Confidence: 0.70458984

00:01:30.909 --> 00:01:31.409 Niranjan

NOTE Confidence: 0.70410156

00:01:31.789 --> 00:01:32.289 Karnik

NOTE Confidence: 0.9842529

00:01:32.750 --> 00:01:33.950 is gonna be presenting next

NOTE Confidence: 0.9842529

00:01:33.950 --> 00:01:35.229 week using big data for

NOTE Confidence: 0.9842529

00:01:35.229 --> 00:01:36.689 child mental health research.

NOTE Confidence: 0.9970006

00:01:37.470 --> 00:01:39.149 So please, mark your calendars

NOTE Confidence: 0.9970006

00:01:39.149 --> 00:01:39.795 for that.

NOTE Confidence: 0.949864

00:01:40.354 --> 00:01:41.715 And then lastly, without further

NOTE Confidence: 0.949864

00:01:41.715 --> 00:01:42.595 ado, I give you our

NOTE Confidence: 0.949864

00:01:42.595 --> 00:01:43.715 three trainees who'll be presenting

NOTE Confidence: 0.949864

00:01:43.715 --> 00:01:44.435 today. I'm not gonna read

NOTE Confidence: 0.949864

00:01:44.435 --> 00:01:45.314 their titles. They can do

NOTE Confidence: 0.949864

00:01:45.314 --> 00:01:46.615 that. We have

NOTE Confidence: 0.85961914

00:01:47.075 --> 00:01:47.575 Lacey

NOTE Confidence: 0.5374349

00:01:48.034 --> 00:01:48.534 Chakudi,

NOTE Confidence: 0.9980469

00:01:49.235 --> 00:01:50.695 and, we have

NOTE Confidence: 0.9134173

00:01:51.075 --> 00:01:52.755 Joseph Heffner, and we have

NOTE Confidence: 0.9134173

00:01:52.755 --> 00:01:53.655 Max Rollison,

NOTE Confidence: 0.9783761

00:01:54.450 --> 00:01:56.950 and, three very talented trainees

NOTE Confidence: 0.9783761

00:01:57.010 --> 00:01:57.970 presenting different,

NOTE Confidence: 0.96402997

00:01:58.450 --> 00:01:59.430 types of work.

NOTE Confidence: 0.9963379

00:02:00.369 --> 00:02:01.250 And I hope that you're

NOTE Confidence: 0.9963379

00:02:01.250 --> 00:02:02.290 all excited to see what

NOTE Confidence: 0.9963379

00:02:02.290 --> 00:02:03.350 they have to offer.

NOTE Confidence: 0.9614622

00:02:03.970 --> 00:02:05.090 And I we ask that

NOTE Confidence: 0.9614622

00:02:05.090 --> 00:02:06.775 you save one question per

NOTE Confidence: 0.9614622

00:02:06.775 --> 00:02:07.975 trainee. So we want one

NOTE Confidence: 0.9614622

00:02:07.975 --> 00:02:10.055 question, after their presentation, then

NOTE Confidence: 0.9614622

00:02:10.055 --> 00:02:10.935 we'll save the end for

NOTE Confidence: 0.9614622

00:02:10.935 --> 00:02:12.395 the the remaining presentations.

NOTE Confidence: 0.99902344

00:02:12.935 --> 00:02:13.675 Thank you.

NOTE Confidence: 0.890625

00:02:24.530 --> 00:02:25.030 Okay.

NOTE Confidence: 0.9419207

00:02:25.490 --> 00:02:27.169 Hi, everyone, and thank you

NOTE Confidence: 0.9419207

00:02:27.169 --> 00:02:28.450 for coming. My name is

NOTE Confidence: 0.9419207

00:02:28.450 --> 00:02:29.570 Lacey Chakutty, and I'm a

NOTE Confidence: 0.9419207

00:02:29.570 --> 00:02:31.410 Hillebrand postdoctoral fellow within the

NOTE Confidence: 0.9419207

00:02:31.410 --> 00:02:33.315 McPartland Lab. And today I'll

NOTE Confidence: 0.9419207

00:02:33.315 --> 00:02:34.355 be talking about how we

NOTE Confidence: 0.9419207

00:02:34.355 --> 00:02:35.415 can bridge transdiagnostic

NOTE Confidence: 0.9934431

00:02:35.794 --> 00:02:38.135 dimensional frameworks and existing clinical

NOTE Confidence: 0.9934431

00:02:38.195 --> 00:02:39.095 measurement approaches

NOTE Confidence: 0.98354495

00:02:39.475 --> 00:02:41.255 to better understand clinical phenomena,

NOTE Confidence: 0.98354495

00:02:41.395 --> 00:02:43.315 and I'll be focusing specifically

NOTE Confidence: 0.98354495

00:02:43.315 --> 00:02:45.175 on social functioning and autism.

NOTE Confidence: 0.9893159

00:02:47.580 --> 00:02:48.620 So first up, I'm going

NOTE Confidence: 0.9893159

00:02:48.620 --> 00:02:49.980 to briefly review traditional and

NOTE Confidence: 0.9893159

00:02:49.980 --> 00:02:52.139 alternative frameworks for conceptualizing clinical

NOTE Confidence: 0.9893159

00:02:52.139 --> 00:02:53.980 phenomena and discuss how our

NOTE Confidence: 0.9893159

00:02:53.980 --> 00:02:54.480 conceptualization

NOTE Confidence: 0.96401745

00:02:55.099 --> 00:02:56.459 influences the way that clinical

NOTE Confidence: 0.96401745

00:02:56.459 --> 00:02:57.980 and phenomena are measured, studied,

NOTE Confidence: 0.96401745

00:02:57.980 --> 00:02:59.200 and ultimately understood.

NOTE Confidence: 0.9584961

00:03:00.495 --> 00:03:01.215 From there, I'm going to

NOTE Confidence: 0.9584961

00:03:01.215 --> 00:03:02.415 walk through our factor analytic

NOTE Confidence: 0.9584961

00:03:02.415 --> 00:03:04.514 study demonstrating how clinical questionnaires

NOTE Confidence: 0.9584961

00:03:04.655 --> 00:03:06.415 originally developed within a traditional

NOTE Confidence: 0.9584961

00:03:06.415 --> 00:03:07.395 conceptual framework

NOTE Confidence: 0.9401143

00:03:07.775 --> 00:03:09.375 can potentially be reorganized to

NOTE Confidence: 0.9401143

00:03:09.375 --> 00:03:11.075 reflect alternative conceptualizations.

NOTE Confidence: 0.98115677

00:03:13.180 --> 00:03:14.620 And then finally, I'll demonstrate

NOTE Confidence: 0.98115677

00:03:14.620 --> 00:03:15.760 how the way we conceptualize

NOTE Confidence: 0.98115677

00:03:15.820 --> 00:03:17.660 and measure clinical phenomena affects

NOTE Confidence: 0.98115677

00:03:17.660 --> 00:03:19.340 our ability to identify underlying

NOTE Confidence: 0.98115677

00:03:19.340 --> 00:03:20.400 biological mechanisms.

NOTE Confidence: 0.9536743

00:03:23.820 --> 00:03:25.925 So psychiatric diagnosis currently relies

NOTE Confidence: 0.9536743

00:03:25.925 --> 00:03:27.605 on categorical systems such as

NOTE Confidence: 0.9536743

00:03:27.605 --> 00:03:29.125 the ICD and most commonly

NOTE Confidence: 0.9536743

00:03:29.125 --> 00:03:30.345 in the US, the DSM.

NOTE Confidence: 0.97596574

00:03:31.125 --> 00:03:33.445 So these systems operationalize clinical

NOTE Confidence: 0.97596574

00:03:33.445 --> 00:03:35.365 phenomena in binary terms, meaning

NOTE Confidence: 0.97596574

00:03:35.365 --> 00:03:37.410 that diagnoses are considered either

NOTE Confidence: 0.97596574

00:03:37.490 --> 00:03:38.390 present or absent

NOTE Confidence: 0.99560547

00:03:38.770 --> 00:03:40.450 based on symptom criteria being

NOTE Confidence: 0.99560547

00:03:40.450 --> 00:03:41.830 met or not met.

NOTE Confidence: 0.9607205

00:03:44.290 --> 00:03:46.130 So autism in particular is

NOTE Confidence: 0.9607205

00:03:46.130 --> 00:03:47.670 defined through two core

NOTE Confidence: 0.9854492

00:03:48.130 --> 00:03:49.750 symptom domains in the DSM.

NOTE Confidence: 0.9469169

00:03:50.385 --> 00:03:52.165 Criterion A is social communication

NOTE Confidence: 0.9469169

00:03:52.225 --> 00:03:52.885 and interaction

NOTE Confidence: 0.8848544

00:03:53.265 --> 00:03:55.185 deficits, and criterion B is

NOTE Confidence: 0.8848544

00:03:55.185 --> 00:03:57.265 restricted repetitive behaviors, interests, or

NOTE Confidence: 0.8848544

00:03:57.265 --> 00:03:57.765 activities.

NOTE Confidence: 0.9541423

00:03:59.185 --> 00:04:00.944 So this clinical approach to

NOTE Confidence: 0.9541423

00:04:00.944 --> 00:04:01.444 conceptualizing

NOTE Confidence: 0.9796387

00:04:01.745 --> 00:04:03.425 clinical phenomena has been valuable

NOTE Confidence: 0.9796387

00:04:03.425 --> 00:04:04.565 for a number of purposes.

NOTE Confidence: 0.9566574

00:04:05.180 --> 00:04:06.300 So for example it helps

NOTE Confidence: 0.9566574

00:04:06.300 --> 00:04:08.140 us standardize our diagnosis, it

NOTE Confidence: 0.9566574

00:04:08.140 --> 00:04:09.500 helps us communicate with each

NOTE Confidence: 0.9566574

00:04:09.500 --> 00:04:10.780 other, and it also helps

NOTE Confidence: 0.9566574

00:04:10.780 --> 00:04:12.480 us organize our research efforts.

NOTE Confidence: 0.9566574

00:04:12.780 --> 00:04:13.980 However, there's also a number

NOTE Confidence: 0.9566574

00:04:13.980 --> 00:04:14.720 of limitations.

NOTE Confidence: 0.9699707

00:04:17.365 --> 00:04:18.025 So firstly,

NOTE Confidence: 0.9472656

00:04:18.884 --> 00:04:20.645 DSM defined symptom domains such

NOTE Confidence: 0.9472656

00:04:20.645 --> 00:04:22.104 as these defined for autism

NOTE Confidence: 0.98616534

00:04:22.404 --> 00:04:23.925 might not reflect how clinical

NOTE Confidence: 0.98616534

00:04:23.925 --> 00:04:26.025 features naturally cluster together.

NOTE Confidence: 0.92285156

00:04:26.724 --> 00:04:28.344 So for example, the DSM

NOTE Confidence: 0.92285156

00:04:28.404 --> 00:04:29.705 groups sensory sensitivities,

NOTE Confidence: 0.97806805

00:04:30.164 --> 00:04:32.160 repetitive movements, and insistence on

NOTE Confidence: 0.97806805

00:04:32.160 --> 00:04:34.240 sameness together under restricted and

NOTE Confidence: 0.97806805

00:04:34.240 --> 00:04:35.220 repetitive behaviors.

NOTE Confidence: 0.9642334

00:04:36.080 --> 00:04:36.900 But research,

NOTE Confidence: 0.9544678

00:04:37.279 --> 00:04:38.720 is suggesting that these features

NOTE Confidence: 0.9544678

00:04:38.720 --> 00:04:41.040 actually represent distinct dimensions and

NOTE Confidence: 0.9544678

00:04:41.040 --> 00:04:42.580 might have different correlates

NOTE Confidence: 0.9914551

00:04:43.040 --> 00:04:44.400 and also have different underlying

NOTE Confidence: 0.9914551

00:04:44.400 --> 00:04:44.900 mechanisms.

NOTE Confidence: 0.98267317

00:04:46.975 --> 00:04:48.735 So next, increasing evidence is

NOTE Confidence: 0.98267317

00:04:48.735 --> 00:04:50.495 also suggesting that many clinical

NOTE Confidence: 0.98267317

00:04:50.495 --> 00:04:52.355 features are dimensional in nature.

NOTE Confidence: 0.98267317

00:04:52.654 --> 00:04:53.535 So this means that they

NOTE Confidence: 0.98267317

00:04:53.535 --> 00:04:54.735 vary in degree across the

NOTE Confidence: 0.98267317

00:04:54.735 --> 00:04:56.415 whole population rather than being

NOTE Confidence: 0.98267317

00:04:56.415 --> 00:04:57.955 simply present or qualitatively

NOTE Confidence: 0.999163

00:04:58.415 --> 00:04:59.695 different in those who have

NOTE Confidence: 0.999163

00:04:59.695 --> 00:05:00.355 a diagnosis

NOTE Confidence: 0.99709064

00:05:00.839 --> 00:05:03.080 and absent or qualitatively typical

NOTE Confidence: 0.99709064

00:05:03.080 --> 00:05:03.880 in those who don't have

NOTE Confidence: 0.99709064

00:05:03.880 --> 00:05:04.540 a diagnosis.

NOTE Confidence: 0.968493

00:05:05.960 --> 00:05:07.339 And then finally, and importantly

NOTE Confidence: 0.968493

00:05:07.400 --> 00:05:09.240 for our study, DSM defined

NOTE Confidence: 0.968493

00:05:09.240 --> 00:05:11.180 symptom domains don't always correspond

NOTE Confidence: 0.968493

00:05:11.240 --> 00:05:12.940 clearly to underlying mechanisms.

NOTE Confidence: 0.9980844

00:05:13.595 --> 00:05:14.795 And this might reflect the

NOTE Confidence: 0.9980844

00:05:14.795 --> 00:05:16.235 fact that these domains are

NOTE Confidence: 0.9980844

00:05:16.235 --> 00:05:17.695 grouping together mechanistically

NOTE Confidence: 0.9943034

00:05:18.155 --> 00:05:20.395 distinct behavioral domains into a

NOTE Confidence: 0.9943034

00:05:20.395 --> 00:05:21.935 single or unified category.

NOTE Confidence: 0.9938151

00:05:24.875 --> 00:05:26.235 So these issues have important

NOTE Confidence: 0.9938151

00:05:26.235 --> 00:05:27.595 implications for how we assess

NOTE Confidence: 0.9938151

00:05:27.595 --> 00:05:28.495 clinical phenomena.

NOTE Confidence: 0.99072266

00:05:29.339 --> 00:05:30.380 So most of the clinical

NOTE Confidence: 0.99072266

00:05:30.380 --> 00:05:31.580 measures that we currently are

NOTE Confidence: 0.99072266

00:05:31.580 --> 00:05:33.339 using were developed within a

NOTE Confidence: 0.99072266

00:05:33.339 --> 00:05:35.120 DSM based conceptual framework.

NOTE Confidence: 0.96388155

00:05:35.900 --> 00:05:37.260 In many cases, the items

NOTE Confidence: 0.96388155

00:05:37.260 --> 00:05:39.040 within these questionnaires were specifically

NOTE Confidence: 0.96388155

00:05:39.100 --> 00:05:40.620 designed to map onto DSM

NOTE Confidence: 0.96388155

00:05:40.620 --> 00:05:41.520 defined domains,

NOTE Confidence: 0.99557495

00:05:41.835 --> 00:05:43.115 and the scoring structures were

NOTE Confidence: 0.99557495

00:05:43.115 --> 00:05:44.315 built around the assumption that

NOTE Confidence: 0.99557495

00:05:44.315 --> 00:05:46.315 these domains reflect coherent underlying

NOTE Confidence: 0.99557495

00:05:46.315 --> 00:05:46.815 constructs.

NOTE Confidence: 0.99370867

00:05:47.755 --> 00:05:49.115 However, if the DSM defined

NOTE Confidence: 0.99370867

00:05:49.115 --> 00:05:50.955 domains themselves don't reflect coherent

NOTE Confidence: 0.99370867

00:05:50.955 --> 00:05:52.315 constructs, as the research is

NOTE Confidence: 0.99370867

00:05:52.315 --> 00:05:54.395 suggesting, then the questionnaire composites

NOTE Confidence: 0.99370867

00:05:54.395 --> 00:05:55.675 derived from them might not

NOTE Confidence: 0.99370867

00:05:55.675 --> 00:05:56.175 either.

NOTE Confidence: 0.96625113

00:05:58.770 --> 00:05:59.890 So as a result our

NOTE Confidence: 0.96625113

00:05:59.890 --> 00:06:01.650 clinical questionnaires are grouping together

NOTE Confidence: 0.96625113

00:06:01.650 --> 00:06:03.330 behaviours that might look similar

NOTE Confidence: 0.96625113

00:06:03.330 --> 00:06:05.010 clinically or that fall within

NOTE Confidence: 0.96625113

00:06:05.010 --> 00:06:06.610 the same DSM domain but

NOTE Confidence: 0.96625113

00:06:06.610 --> 00:06:07.810 that are actually driven by

NOTE Confidence: 0.96625113

00:06:07.810 --> 00:06:09.670 different underlying biological mechanisms.

NOTE Confidence: 0.95529354

00:06:10.884 --> 00:06:12.324 So ultimately this might be

NOTE Confidence: 0.95529354

00:06:12.324 --> 00:06:13.925 limiting our ability to link

NOTE Confidence: 0.95529354

00:06:13.925 --> 00:06:15.525 those behavioral features to underlying

NOTE Confidence: 0.95529354

00:06:15.525 --> 00:06:16.664 biological mechanisms.

NOTE Confidence: 0.991612

00:06:19.925 --> 00:06:21.544 Given the limitations of categorical

NOTE Confidence: 0.991612

00:06:21.604 --> 00:06:22.964 systems, there has been increasing

NOTE Confidence: 0.991612

00:06:22.964 --> 00:06:24.585 interest in alternative frameworks.

NOTE Confidence: 0.9827411

00:06:25.570 --> 00:06:27.490 Broadly speaking, these frameworks propose

NOTE Confidence: 0.9827411

00:06:27.490 --> 00:06:28.450 that we should move away

NOTE Confidence: 0.9827411

00:06:28.450 --> 00:06:29.830 from categorical diagnosis

NOTE Confidence: 0.9779053

00:06:30.210 --> 00:06:32.450 and instead conceptualise clinical phenomena

NOTE Confidence: 0.9779053

00:06:32.450 --> 00:06:33.810 in terms of functioning within

NOTE Confidence: 0.9779053

00:06:33.810 --> 00:06:35.410 discrete dimensions and systems that

NOTE Confidence: 0.9779053

00:06:35.410 --> 00:06:37.830 cut across traditional diagnostic boundaries.

NOTE Confidence: 0.9983724

00:06:39.145 --> 00:06:39.865 So there are a number

NOTE Confidence: 0.9983724

00:06:39.865 --> 00:06:41.705 of key differences between categorical

NOTE Confidence: 0.9983724

00:06:41.705 --> 00:06:42.685 models and transdiagnostic

NOTE Confidence: 0.98583984

00:06:42.985 --> 00:06:43.485 models.

NOTE Confidence: 0.97631836

00:06:43.865 --> 00:06:44.685 So firstly,

NOTE Confidence: 0.96261936

00:06:44.985 --> 00:06:46.345 whereas the DSM might ask

NOTE Confidence: 0.96261936

00:06:46.345 --> 00:06:47.964 whether someone meets criteria

NOTE Confidence: 0.9986572

00:06:48.505 --> 00:06:49.705 for a diagnosis based on

NOTE Confidence: 0.9986572

00:06:49.705 --> 00:06:50.745 the presence or absence of

NOTE Confidence: 0.9986572

00:06:50.745 --> 00:06:51.645 clinical features,

NOTE Confidence: 0.9895395

00:06:51.970 --> 00:06:54.130 transdiagnostic models conceptualize the same

NOTE Confidence: 0.9895395

00:06:54.130 --> 00:06:55.650 clinical features as varying in

NOTE Confidence: 0.9895395

00:06:55.650 --> 00:06:56.950 degree across individuals.

NOTE Confidence: 0.96895343

00:06:57.889 --> 00:06:59.330 And rather than reducing this

NOTE Confidence: 0.96895343

00:06:59.330 --> 00:07:00.529 information to a yes or

NOTE Confidence: 0.96895343

00:07:00.529 --> 00:07:01.270 no diagnosis,

NOTE Confidence: 0.9926758

00:07:01.730 --> 00:07:03.650 that dimensional profile itself becomes

NOTE Confidence: 0.9926758

00:07:03.650 --> 00:07:05.089 the focus of characterization and

NOTE Confidence: 0.9926758

00:07:05.089 --> 00:07:06.150 the focus of study.

NOTE Confidence: 0.9701647

00:07:08.884 --> 00:07:10.565 Next, where the DSM groups

NOTE Confidence: 0.9701647

00:07:10.565 --> 00:07:11.764 symptoms based on how they're

NOTE Confidence: 0.9701647

00:07:11.764 --> 00:07:13.305 appearing clinically, transdiagnostic

NOTE Confidence: 0.99703777

00:07:13.685 --> 00:07:15.284 models aim to group symptoms

NOTE Confidence: 0.99703777

00:07:15.284 --> 00:07:16.824 based on the underlying processes

NOTE Confidence: 0.99703777

00:07:16.884 --> 00:07:18.264 that might be driving them.

NOTE Confidence: 0.95330405

00:07:19.430 --> 00:07:20.870 And finally whereas the DSM

NOTE Confidence: 0.95330405

00:07:20.870 --> 00:07:22.250 focuses on what makes diagnoses

NOTE Confidence: 0.95330405

00:07:22.470 --> 00:07:24.169 different from one another, transdiagnostic

NOTE Confidence: 0.9986165

00:07:24.550 --> 00:07:26.070 approaches focus on features that

NOTE Confidence: 0.9986165

00:07:26.070 --> 00:07:27.610 are shared across conditions.

NOTE Confidence: 0.96254474

00:07:30.470 --> 00:07:31.770 So a number of transdiagnostic

NOTE Confidence: 0.96254474

00:07:31.990 --> 00:07:33.375 dimensional models have been put

NOTE Confidence: 0.96254474

00:07:33.375 --> 00:07:34.415 forward, but one that's been

NOTE Confidence: 0.96254474

00:07:34.415 --> 00:07:36.255 particularly influential is the research

NOTE Confidence: 0.96254474

00:07:36.255 --> 00:07:38.115 domain criteria or RDoC.

NOTE Confidence: 0.9655599

00:07:38.895 --> 00:07:40.515 So this framework was introduced

NOTE Confidence: 0.9655599

00:07:40.815 --> 00:07:42.255 by the National Institute of

NOTE Confidence: 0.9655599

00:07:42.255 --> 00:07:43.555 Mental Health in two thousand

NOTE Confidence: 0.92606294

00:07:43.935 --> 00:07:45.215 and ten and has the

NOTE Confidence: 0.92606294

00:07:45.215 --> 00:07:47.295 ultimate goal of progressing precision

NOTE Confidence: 0.92606294

00:07:47.295 --> 00:07:48.515 medicine in psychiatry.

NOTE Confidence: 0.98760307

00:07:50.230 --> 00:07:51.830 So rather than organizing clinical

NOTE Confidence: 0.98760307

00:07:51.830 --> 00:07:53.930 phenomena around diagnostic categories,

NOTE Confidence: 0.9751248

00:07:54.230 --> 00:07:55.930 RDoC conceptualizes psychopathology

NOTE Confidence: 0.9859619

00:07:56.310 --> 00:07:57.670 in terms of functioning across

NOTE Confidence: 0.9859619

00:07:57.670 --> 00:07:59.350 core dimensions of human behavior

NOTE Confidence: 0.9859619

00:07:59.350 --> 00:08:00.010 and neurobiology.

NOTE Confidence: 0.97317505

00:08:01.645 --> 00:08:03.485 And currently, RDoc defines six

NOTE Confidence: 0.97317505

00:08:03.485 --> 00:08:05.405 core dimensions. These are the

NOTE Confidence: 0.97317505

00:08:05.405 --> 00:08:07.724 negative valence system, positive valence

NOTE Confidence: 0.97317505

00:08:07.724 --> 00:08:08.224 system,

NOTE Confidence: 0.9972534

00:08:08.525 --> 00:08:09.905 systems for social processes,

NOTE Confidence: 1

00:08:10.284 --> 00:08:11.344 cognitive systems,

NOTE Confidence: 0.97943115

00:08:11.645 --> 00:08:13.645 arousal regulatory systems, and then

NOTE Confidence: 0.97943115

00:08:13.645 --> 00:08:14.784 sensory motor systems.

NOTE Confidence: 0.98124474

00:08:15.919 --> 00:08:17.360 Each of these domains comprises

NOTE Confidence: 0.98124474

00:08:17.360 --> 00:08:18.479 a number of more specific

NOTE Confidence: 0.98124474

00:08:18.479 --> 00:08:19.840 constructs and sub constructs, and

NOTE Confidence: 0.98124474

00:08:19.840 --> 00:08:21.039 these can be measured across

NOTE Confidence: 0.98124474

00:08:21.039 --> 00:08:22.479 units of analysis from the

NOTE Confidence: 0.98124474

00:08:22.479 --> 00:08:23.460 brain to behaviour.

NOTE Confidence: 0.94867814

00:08:25.120 --> 00:08:26.319 So for example, one that's

NOTE Confidence: 0.94867814

00:08:26.319 --> 00:08:28.000 particularly relevant to autism is

NOTE Confidence: 0.94867814

00:08:28.000 --> 00:08:29.379 systems for social processes,

NOTE Confidence: 0.99763995

00:08:29.815 --> 00:08:31.095 And these are processes that

NOTE Confidence: 0.99763995

00:08:31.095 --> 00:08:32.934 underlie responses to interpersonal and

NOTE Confidence: 0.99763995

00:08:32.934 --> 00:08:33.755 social stimuli

NOTE Confidence: 0.94662

00:08:34.295 --> 00:08:35.815 and includes the constructs of

NOTE Confidence: 0.94662

00:08:35.815 --> 00:08:37.995 attachment and affiliation, social communication,

NOTE Confidence: 0.94662

00:08:38.215 --> 00:08:39.895 and perception and understanding of

NOTE Confidence: 0.94662

00:08:39.895 --> 00:08:41.335 the self and others. And

NOTE Confidence: 0.94662

00:08:41.335 --> 00:08:42.775 each of these constructs also

NOTE Confidence: 0.94662

00:08:42.775 --> 00:08:44.670 comprises sub constructs, and they

NOTE Confidence: 0.94662

00:08:44.670 --> 00:08:45.870 can be measured across the

NOTE Confidence: 0.94662

00:08:45.870 --> 00:08:47.550 universe- and units of analysis

NOTE Confidence: 0.94662

00:08:47.550 --> 00:08:48.690 shown on the slide there.

NOTE Confidence: 0.96465665

00:08:52.350 --> 00:08:54.530 So although frameworks like RDoC

NOTE Confidence: 0.96465665

00:08:54.590 --> 00:08:56.210 sound good in theory, operationalizing

NOTE Confidence: 0.9696917

00:08:56.670 --> 00:08:58.429 them in practice remains a

NOTE Confidence: 0.9696917

00:08:58.429 --> 00:08:59.330 major challenge,

NOTE Confidence: 0.92583984

00:08:59.785 --> 00:09:00.905 And this is because to

NOTE Confidence: 0.92583984

00:09:00.905 --> 00:09:02.345 operationalize our Ad hoc, we

NOTE Confidence: 0.92583984

00:09:02.345 --> 00:09:03.304 need to have measures that

NOTE Confidence: 0.92583984

00:09:03.304 --> 00:09:04.825 capture the dimensional constructs that

NOTE Confidence: 0.92583984

00:09:04.825 --> 00:09:06.285 are defined within their framework.

NOTE Confidence: 0.9839994

00:09:07.065 --> 00:09:08.265 However, most of the clinical

NOTE Confidence: 0.9839994

00:09:08.265 --> 00:09:09.785 questionnaires that we currently use

NOTE Confidence: 0.9839994

00:09:09.785 --> 00:09:11.145 weren't developed to capture the

NOTE Confidence: 0.9839994

00:09:11.145 --> 00:09:12.605 more fine grained and biologically

NOTE Confidence: 0.9839994

00:09:12.665 --> 00:09:14.345 informed constructs that Ad hoc

NOTE Confidence: 0.9839994

00:09:14.345 --> 00:09:14.845 emphasizes.

NOTE Confidence: 0.99179417

00:09:15.730 --> 00:09:16.770 And there have been no

NOTE Confidence: 0.99179417

00:09:16.770 --> 00:09:18.790 measures specifically developed to capture

NOTE Confidence: 0.99179417

00:09:18.850 --> 00:09:19.590 RDoC constructs.

NOTE Confidence: 0.9829361

00:09:22.450 --> 00:09:23.570 So my research then is

NOTE Confidence: 0.9829361

00:09:23.570 --> 00:09:24.850 broadly focused on addressing this

NOTE Confidence: 0.9829361

00:09:24.850 --> 00:09:27.090 gap, by developing measurement approaches

NOTE Confidence: 0.9829361

00:09:27.090 --> 00:09:28.470 that can support the implementation

NOTE Confidence: 0.9829361

00:09:28.690 --> 00:09:29.430 of transdiagnostic

NOTE Confidence: 0.9601961

00:09:29.809 --> 00:09:31.695 dimensional frameworks like RDoC in

NOTE Confidence: 0.9601961

00:09:31.695 --> 00:09:32.995 research and clinical practice.

NOTE Confidence: 0.98605686

00:09:34.575 --> 00:09:35.214 And today I'm going to

NOTE Confidence: 0.98605686

00:09:35.214 --> 00:09:36.175 be sharing a project that

NOTE Confidence: 0.98605686

00:09:36.175 --> 00:09:37.054 I've been working on during

NOTE Confidence: 0.98605686

00:09:37.054 --> 00:09:38.095 my time at Yale that

NOTE Confidence: 0.98605686

00:09:38.095 --> 00:09:39.855 examines whether RDoC systems for

NOTE Confidence: 0.98605686

00:09:39.855 --> 00:09:40.675 social processes

NOTE Confidence: 0.9955241

00:09:41.054 --> 00:09:42.415 could be derived from clinical

NOTE Confidence: 0.9955241

00:09:42.415 --> 00:09:44.175 questionnaires that were originally developed

NOTE Confidence: 0.9955241

00:09:44.175 --> 00:09:46.274 within a DSM based framework.

NOTE Confidence: 0.97217906

00:09:49.670 --> 00:09:51.029 In doing so, my broader

NOTE Confidence: 0.97217906

00:09:51.029 --> 00:09:52.069 goal in this research is

NOTE Confidence: 0.97217906

00:09:52.069 --> 00:09:53.850 to facilitate a more comprehensive

NOTE Confidence: 0.97217906

00:09:53.990 --> 00:09:56.069 dimensional characterization of social functioning

NOTE Confidence: 0.97217906

00:09:56.069 --> 00:09:56.730 and autism,

NOTE Confidence: 0.97700894

00:09:57.110 --> 00:09:58.629 to further evaluate the utility

NOTE Confidence: 0.97700894

00:09:58.629 --> 00:09:59.929 of RDoC as an organizing

NOTE Confidence: 0.97700894

00:09:59.990 --> 00:10:01.684 framework, and also to provide

NOTE Confidence: 0.97700894

00:10:01.825 --> 00:10:02.625 new ways that we might

NOTE Confidence: 0.97700894

00:10:02.625 --> 00:10:03.585 be able to leverage our

NOTE Confidence: 0.97700894

00:10:03.585 --> 00:10:05.745 existing datasets for dimensional and

NOTE Confidence: 0.97700894

00:10:05.745 --> 00:10:07.285 biologically informed research.

NOTE Confidence: 0.93112326

00:10:10.865 --> 00:10:12.065 So we used data from

NOTE Confidence: 0.93112326

00:10:12.065 --> 00:10:13.905 the Autism Biomarkers Consortium for

NOTE Confidence: 0.93112326

00:10:13.905 --> 00:10:15.525 Clinical Trials or ABCCT,

NOTE Confidence: 0.9551432

00:10:16.130 --> 00:10:17.490 which is a multi site

NOTE Confidence: 0.9551432

00:10:17.490 --> 00:10:18.929 cohort that's collected across five

NOTE Confidence: 0.9551432

00:10:18.929 --> 00:10:20.309 sites in the United States.

NOTE Confidence: 0.9547526

00:10:20.929 --> 00:10:22.529 This sample was deeply phenotyped,

NOTE Confidence: 0.9547526

00:10:22.529 --> 00:10:24.290 and the dataset included multiple

NOTE Confidence: 0.9547526

00:10:24.290 --> 00:10:25.269 caregiver reported

NOTE Confidence: 0.9838436

00:10:25.570 --> 00:10:27.809 clinical questionnaires alongside EEG and

NOTE Confidence: 0.9838436

00:10:27.809 --> 00:10:29.250 eye tracking assessments, which made

NOTE Confidence: 0.9838436

00:10:29.250 --> 00:10:30.370 it really well suited for

NOTE Confidence: 0.9838436

00:10:30.370 --> 00:10:31.029 our analysis.

NOTE Confidence: 0.9707947

00:10:32.184 --> 00:10:33.625 And our sample included four

NOTE Confidence: 0.9707947

00:10:33.625 --> 00:10:34.985 hundred and eighty children who

NOTE Confidence: 0.9707947

00:10:34.985 --> 00:10:36.345 had a DSM diagnosis of

NOTE Confidence: 0.9707947

00:10:36.345 --> 00:10:36.845 autism,

NOTE Confidence: 0.94091797

00:10:37.625 --> 00:10:38.505 they had a mean age

NOTE Confidence: 0.94091797

00:10:38.505 --> 00:10:39.305 of eight and a half

NOTE Confidence: 0.94091797

00:10:39.305 --> 00:10:41.705 years, sixty per sixty sorry.

NOTE Confidence: 0.94091797

00:10:41.705 --> 00:10:43.225 Seventy six percent were male

NOTE Confidence: 0.94091797

00:10:43.225 --> 00:10:44.845 and sixty six percent identified

NOTE Confidence: 0.94091797

00:10:44.985 --> 00:10:45.805 as white.

NOTE Confidence: 0.9760187

00:10:48.460 --> 00:10:49.340 Our first step in our

NOTE Confidence: 0.9760187

00:10:49.340 --> 00:10:50.620 procedure was to canvas the

NOTE Confidence: 0.9760187

00:10:50.620 --> 00:10:52.940 existing caregiver report clinical measures

NOTE Confidence: 0.9760187

00:10:52.940 --> 00:10:53.820 that were included in the

NOTE Confidence: 0.9760187

00:10:53.820 --> 00:10:55.120 ABCCT protocol

NOTE Confidence: 0.9501736

00:10:56.140 --> 00:10:57.980 to determine which RDoC constructs

NOTE Confidence: 0.9501736

00:10:57.980 --> 00:11:00.160 and RDoC, RDoC sub constructs

NOTE Confidence: 0.9501736

00:11:00.220 --> 00:11:01.840 were represented by their items.

NOTE Confidence: 0.9589218

00:11:02.834 --> 00:11:04.535 So among the available questionnaires,

NOTE Confidence: 0.9589218

00:11:04.675 --> 00:11:06.434 we found that five included

NOTE Confidence: 0.9589218

00:11:06.434 --> 00:11:07.714 items that were relevant to

NOTE Confidence: 0.9589218

00:11:07.714 --> 00:11:09.235 Rdoc's social processes, and those

NOTE Confidence: 0.9589218

00:11:09.235 --> 00:11:10.195 are listed on the slide

NOTE Confidence: 0.9589218

00:11:10.195 --> 00:11:10.695 there.

NOTE Confidence: 0.9498291

00:11:11.074 --> 00:11:12.934 And across those five,

NOTE Confidence: 0.88416886

00:11:13.475 --> 00:11:15.095 questionnaires, we found,

NOTE Confidence: 0.8254489

00:11:15.520 --> 00:11:17.460 fifty eight items that represented

NOTE Confidence: 0.8254489

00:11:17.600 --> 00:11:19.279 different constructs in Rdoc- and

NOTE Confidence: 0.8254489

00:11:19.279 --> 00:11:20.580 Rdoc sub constructs.

NOTE Confidence: 0.97985023

00:11:23.520 --> 00:11:24.800 So our next step was

NOTE Confidence: 0.97985023

00:11:24.800 --> 00:11:26.820 to analyze the item content

NOTE Confidence: 0.97985023

00:11:26.880 --> 00:11:28.179 of each of those items

NOTE Confidence: 0.92039204

00:11:28.559 --> 00:11:30.995 and determine which RDoC domain

NOTE Confidence: 0.92039204

00:11:30.995 --> 00:11:32.695 they best corresponded to.

NOTE Confidence: 0.99826884

00:11:32.995 --> 00:11:34.355 And through that process, we

NOTE Confidence: 0.99826884

00:11:34.355 --> 00:11:35.735 found that we had items

NOTE Confidence: 0.99826884

00:11:35.795 --> 00:11:36.295 representing

NOTE Confidence: 0.9739584

00:11:36.755 --> 00:11:38.515 five RDoC constructs and sub

NOTE Confidence: 0.9739584

00:11:38.515 --> 00:11:40.115 constructs. So we had items

NOTE Confidence: 0.9739584

00:11:40.115 --> 00:11:41.655 representing attachment and affiliation,

NOTE Confidence: 0.9817592

00:11:42.620 --> 00:11:43.980 three sub constructs within the

NOTE Confidence: 0.9817592

00:11:43.980 --> 00:11:44.880 social communication,

NOTE Confidence: 0.9674072

00:11:45.980 --> 00:11:47.500 broader construct being the production

NOTE Confidence: 0.9674072

00:11:47.500 --> 00:11:48.480 of facial communication,

NOTE Confidence: 0.9374145

00:11:48.940 --> 00:11:50.559 production of non facial communication,

NOTE Confidence: 0.9374145

00:11:50.699 --> 00:11:52.699 and reception of communication combining

NOTE Confidence: 0.9374145

00:11:52.699 --> 00:11:54.300 facial and non facial, and

NOTE Confidence: 0.9374145

00:11:54.300 --> 00:11:56.160 then finally we had items,

NOTE Confidence: 0.9822862

00:11:56.745 --> 00:11:58.925 reflecting the understanding mental states

NOTE Confidence: 0.9822862

00:11:59.065 --> 00:12:00.585 subconstruct, which is in within

NOTE Confidence: 0.9822862

00:12:00.585 --> 00:12:02.025 the broader perception and understanding

NOTE Confidence: 0.9822862

00:12:02.025 --> 00:12:03.085 of others construct.

NOTE Confidence: 0.8719279

00:12:05.304 --> 00:12:06.825 And next, we applied factor

NOTE Confidence: 0.8719279

00:12:06.825 --> 00:12:07.325 analysis.

NOTE Confidence: 0.97749025

00:12:08.265 --> 00:12:09.485 So this is a statistical

NOTE Confidence: 0.97749025

00:12:09.705 --> 00:12:11.645 technique that's used to identify

NOTE Confidence: 0.99780273

00:12:12.149 --> 00:12:14.089 latent or unobserved dimensions

NOTE Confidence: 0.9290975

00:12:14.550 --> 00:12:17.190 underlying observed behaviors or variables.

NOTE Confidence: 0.9290975

00:12:17.190 --> 00:12:18.309 So in our case, we

NOTE Confidence: 0.9290975

00:12:18.309 --> 00:12:19.050 are identifying

NOTE Confidence: 0.99908847

00:12:19.429 --> 00:12:21.769 unobservable dimensions of social functioning

NOTE Confidence: 0.97835284

00:12:22.309 --> 00:12:24.470 from observable behaviors as indicated

NOTE Confidence: 0.97835284

00:12:24.470 --> 00:12:25.929 by our questionnaire items.

NOTE Confidence: 0.9482247

00:12:27.134 --> 00:12:28.654 For our analysis, we used

NOTE Confidence: 0.9482247

00:12:28.654 --> 00:12:31.134 confirmatory application of exploratory structural

NOTE Confidence: 0.9482247

00:12:31.134 --> 00:12:32.755 equation modeling or ERCM,

NOTE Confidence: 0.93996084

00:12:33.214 --> 00:12:34.495 and we tested models that

NOTE Confidence: 0.93996084

00:12:34.495 --> 00:12:36.654 specified the five hypothesized rdoc

NOTE Confidence: 0.93996084

00:12:36.654 --> 00:12:38.175 dimensions as well as bifactor

NOTE Confidence: 0.93996084

00:12:38.175 --> 00:12:39.960 models that included both those

NOTE Confidence: 0.93996084

00:12:39.960 --> 00:12:40.460 specific

NOTE Confidence: 0.96805245

00:12:40.920 --> 00:12:42.120 dimensions as well as a

NOTE Confidence: 0.96805245

00:12:42.120 --> 00:12:42.940 general factor,

NOTE Confidence: 0.96768624

00:12:43.320 --> 00:12:45.240 and this general factor, it

NOTE Confidence: 0.96768624

00:12:45.240 --> 00:12:47.080 essentially reflects a broad overall

NOTE Confidence: 0.96768624

00:12:47.080 --> 00:12:48.460 dimension of social functioning

NOTE Confidence: 0.97052556

00:12:48.920 --> 00:12:51.080 or might be represented as

NOTE Confidence: 0.97052556

00:12:51.080 --> 00:12:52.520 a total score in standard

NOTE Confidence: 0.97052556

00:12:52.520 --> 00:12:53.020 scoring.

NOTE Confidence: 0.9688358

00:12:55.804 --> 00:12:57.005 So what we found was

NOTE Confidence: 0.9688358

00:12:57.005 --> 00:12:58.285 that our initial model with

NOTE Confidence: 0.9688358

00:12:58.285 --> 00:13:00.385 those five specific factors demonstrated

NOTE Confidence: 0.9688358

00:13:00.525 --> 00:13:02.525 good overall fit, however our

NOTE Confidence: 0.9688358

00:13:02.525 --> 00:13:04.605 items didn't discriminate well between

NOTE Confidence: 0.9688358

00:13:04.605 --> 00:13:06.145 the production of facial communication

NOTE Confidence: 0.9688358

00:13:06.365 --> 00:13:07.804 versus the production of non

NOTE Confidence: 0.9688358

00:13:07.804 --> 00:13:08.705 facial communication,

NOTE Confidence: 0.9624256

00:13:09.360 --> 00:13:10.880 So we combined those items

NOTE Confidence: 0.9624256

00:13:10.880 --> 00:13:12.320 into a singular production of

NOTE Confidence: 0.9624256

00:13:12.320 --> 00:13:14.000 communication factor and then revised

NOTE Confidence: 0.9624256

00:13:14.000 --> 00:13:15.120 the model and then reran

NOTE Confidence: 0.9624256

00:13:15.120 --> 00:13:15.620 it,

NOTE Confidence: 0.97402954

00:13:16.160 --> 00:13:17.760 and our revised model with

NOTE Confidence: 0.97402954

00:13:17.760 --> 00:13:19.839 four specific factors demonstrated good

NOTE Confidence: 0.97402954

00:13:19.839 --> 00:13:21.300 fit, but it was further

NOTE Confidence: 0.97402954

00:13:21.600 --> 00:13:22.880 improved when we included a

NOTE Confidence: 0.97402954

00:13:22.880 --> 00:13:24.260 general factor as well.

NOTE Confidence: 0.96108776

00:13:25.804 --> 00:13:27.005 So this is our final

NOTE Confidence: 0.96108776

00:13:27.005 --> 00:13:28.285 model on the slide here,

NOTE Confidence: 0.96108776

00:13:28.285 --> 00:13:29.725 so the yellow boxes represent

NOTE Confidence: 0.96108776

00:13:29.725 --> 00:13:31.565 those individual questionnaire items and

NOTE Confidence: 0.96108776

00:13:31.565 --> 00:13:33.085 the ovals represent those latent

NOTE Confidence: 0.96108776

00:13:33.085 --> 00:13:33.585 dimensions.

NOTE Confidence: 0.95779854

00:13:35.005 --> 00:13:36.125 I realize this text is

NOTE Confidence: 0.95779854

00:13:36.125 --> 00:13:37.325 quite small, particularly for those

NOTE Confidence: 0.95779854

00:13:37.325 --> 00:13:38.525 yellow boxes, and I absolutely

NOTE Confidence: 0.95779854

00:13:38.525 --> 00:13:39.485 don't expect you to read

NOTE Confidence: 0.95779854

00:13:39.485 --> 00:13:41.160 them. The key point is

NOTE Confidence: 0.95779854

00:13:41.160 --> 00:13:42.780 that the final structure included

NOTE Confidence: 0.95779854

00:13:42.920 --> 00:13:44.360 both shared variance across all

NOTE Confidence: 0.95779854

00:13:44.360 --> 00:13:45.880 of those items as reflected

NOTE Confidence: 0.95779854

00:13:45.880 --> 00:13:47.320 in our general factor, as

NOTE Confidence: 0.95779854

00:13:47.320 --> 00:13:48.840 well as more specific dimensions

NOTE Confidence: 0.95779854

00:13:48.840 --> 00:13:50.760 being attachment affiliation, production of

NOTE Confidence: 0.95779854

00:13:50.760 --> 00:13:51.260 communication,

NOTE Confidence: 0.9919782

00:13:51.800 --> 00:13:53.800 reception of communication, and understanding

NOTE Confidence: 0.9919782

00:13:53.800 --> 00:13:54.620 mental states.

NOTE Confidence: 0.9861421

00:13:58.105 --> 00:13:59.705 So taken together, our results

NOTE Confidence: 0.9861421

00:13:59.705 --> 00:14:01.545 suggest that existing DSM based

NOTE Confidence: 0.9861421

00:14:01.545 --> 00:14:03.465 clinical questionnaires may provide us

NOTE Confidence: 0.9861421

00:14:03.465 --> 00:14:04.745 with a practical means of

NOTE Confidence: 0.9861421

00:14:04.745 --> 00:14:05.245 operationalizing

NOTE Confidence: 0.9387478

00:14:05.625 --> 00:14:07.385 dimensions of functioning that RDoC

NOTE Confidence: 0.9387478

00:14:07.385 --> 00:14:07.885 conceptualizes,

NOTE Confidence: 0.9895946

00:14:08.920 --> 00:14:10.360 and that the dimensions we

NOTE Confidence: 0.9895946

00:14:10.360 --> 00:14:11.720 have provide a more fine

NOTE Confidence: 0.9895946

00:14:11.720 --> 00:14:13.820 grained characterization of social functioning

NOTE Confidence: 0.9895946

00:14:13.960 --> 00:14:15.720 than DSM defined domains and

NOTE Confidence: 0.9895946

00:14:15.720 --> 00:14:17.320 the broader composites typically used

NOTE Confidence: 0.9895946

00:14:17.320 --> 00:14:18.700 within our existing questionnaires.

NOTE Confidence: 0.9730428

00:14:20.280 --> 00:14:22.054 And importantly, because RDoC constructs

NOTE Confidence: 0.9730428

00:14:22.054 --> 00:14:24.075 are conceptualized as reflecting underlying

NOTE Confidence: 0.9730428

00:14:24.135 --> 00:14:25.355 biological systems,

NOTE Confidence: 0.99560547

00:14:25.735 --> 00:14:26.475 these dimensions

NOTE Confidence: 0.97595215

00:14:27.015 --> 00:14:29.195 may better capture separable underlying

NOTE Confidence: 0.97595215

00:14:29.334 --> 00:14:29.834 biological

NOTE Confidence: 0.96606445

00:14:30.135 --> 00:14:30.635 processes.

NOTE Confidence: 0.9459919

00:14:31.894 --> 00:14:32.774 And this led us to

NOTE Confidence: 0.9459919

00:14:32.774 --> 00:14:34.290 our next question, which was:

NOTE Confidence: 0.9459919

00:14:34.449 --> 00:14:36.209 do these dimensions actually relate

NOTE Confidence: 0.9459919

00:14:36.209 --> 00:14:37.970 to biological measures in meaningful

NOTE Confidence: 0.9459919

00:14:37.970 --> 00:14:39.029 and distinct ways?

NOTE Confidence: 0.9685547

00:14:39.570 --> 00:14:40.850 And in doing so, do

NOTE Confidence: 0.9685547

00:14:40.850 --> 00:14:42.449 they improve our alignment between

NOTE Confidence: 0.9685547

00:14:42.449 --> 00:14:44.630 behavioral measures and underlying biology?

NOTE Confidence: 0.9880053

00:14:47.329 --> 00:14:48.295 So one of the central

NOTE Confidence: 0.9880053

00:14:48.295 --> 00:14:49.735 ideas within the RDoC framework

NOTE Confidence: 0.9880053

00:14:49.735 --> 00:14:50.954 is that the same constructs

NOTE Confidence: 0.9880053

00:14:51.175 --> 00:14:53.175 should be measurable across multiple

NOTE Confidence: 0.9880053

00:14:53.175 --> 00:14:54.235 units of analysis.

NOTE Confidence: 0.9914657

00:14:54.615 --> 00:14:55.894 So if the dimensions we

NOTE Confidence: 0.9914657

00:14:55.894 --> 00:14:57.415 identified are meaningful, we would

NOTE Confidence: 0.9914657

00:14:57.415 --> 00:14:58.535 expect them to relate to

NOTE Confidence: 0.9914657

00:14:58.535 --> 00:15:00.295 biological measures in systematic and

NOTE Confidence: 0.9914657

00:15:00.295 --> 00:15:01.675 potentially distinct ways.

NOTE Confidence: 0.96882766

00:15:03.590 --> 00:15:05.029 So to begin evaluating this,

NOTE Confidence: 0.96882766

00:15:05.029 --> 00:15:06.790 we examined associations between the

NOTE Confidence: 0.96882766

00:15:06.790 --> 00:15:08.470 dimensions identified in our factor

NOTE Confidence: 0.96882766

00:15:08.470 --> 00:15:10.630 models and physiological measures of

NOTE Confidence: 0.96882766

00:15:10.630 --> 00:15:11.529 social functioning,

NOTE Confidence: 0.962207

00:15:11.990 --> 00:15:13.350 being the EEG and eye

NOTE Confidence: 0.962207

00:15:13.350 --> 00:15:15.290 tracking biomarkers within the ABCCT.

NOTE Confidence: 0.9405084

00:15:16.745 --> 00:15:18.345 So these analyses were conducted

NOTE Confidence: 0.9405084

00:15:18.345 --> 00:15:20.365 using the same ABCCT dataset

NOTE Confidence: 0.9405084

00:15:20.505 --> 00:15:22.025 in a subsample of two

NOTE Confidence: 0.9405084

00:15:22.025 --> 00:15:23.565 zero four children with autism

NOTE Confidence: 0.9405084

00:15:23.865 --> 00:15:24.825 while we were controlling for

NOTE Confidence: 0.9405084

00:15:24.825 --> 00:15:26.025 differences in age, sex and

NOTE Confidence: 0.9405084

00:15:26.025 --> 00:15:26.525 IQ.

NOTE Confidence: 0.98240376

00:15:29.260 --> 00:15:30.220 And what we found was

NOTE Confidence: 0.98240376

00:15:30.220 --> 00:15:31.519 that each of our RDoC

NOTE Confidence: 0.98240376

00:15:31.579 --> 00:15:33.660 factors correlated significantly with one

NOTE Confidence: 0.98240376

00:15:33.660 --> 00:15:34.640 or more biomarker.

NOTE Confidence: 0.98754144

00:15:35.660 --> 00:15:37.339 However, what was more exciting

NOTE Confidence: 0.98754144

00:15:37.339 --> 00:15:38.459 is that rather than all

NOTE Confidence: 0.98754144

00:15:38.459 --> 00:15:40.300 of the social processes relating

NOTE Confidence: 0.98754144

00:15:40.300 --> 00:15:41.579 to biology in the same

NOTE Confidence: 0.98754144

00:15:41.579 --> 00:15:42.995 way, we saw a mix

NOTE Confidence: 0.98754144

00:15:42.995 --> 00:15:44.855 of shared and distinct associations

NOTE Confidence: 0.98754144

00:15:44.915 --> 00:15:45.975 across the biomarkers,

NOTE Confidence: 0.98720706

00:15:46.835 --> 00:15:48.115 and each colored tick here

NOTE Confidence: 0.98720706

00:15:48.115 --> 00:15:49.655 is reflecting a different biomarker.

NOTE Confidence: 0.99491745

00:15:50.995 --> 00:15:52.275 So this pattern is suggesting

NOTE Confidence: 0.99491745

00:15:52.275 --> 00:15:53.555 that these dimensions might be

NOTE Confidence: 0.99491745

00:15:53.555 --> 00:15:55.315 capturing different aspects of social

NOTE Confidence: 0.99491745

00:15:55.315 --> 00:15:56.580 functioning that are at least

NOTE Confidence: 0.99491745

00:15:56.740 --> 00:15:57.560 partially biologically

NOTE Confidence: 0.94661456

00:15:58.100 --> 00:15:58.600 separable.

NOTE Confidence: 0.9429609

00:16:01.540 --> 00:16:02.660 And when we compared our

NOTE Confidence: 0.9429609

00:16:02.660 --> 00:16:04.180 correlations to those derived using

NOTE Confidence: 0.9429609

00:16:04.180 --> 00:16:06.260 standard questionnaire composite scores our

NOTE Confidence: 0.9429609

00:16:06.260 --> 00:16:08.100 RDoC dimensions appear to provide

NOTE Confidence: 0.9429609

00:16:08.100 --> 00:16:09.880 clearer, stronger, and more differentiated

NOTE Confidence: 0.9429609

00:16:10.020 --> 00:16:11.400 relationships with the biomarkers.

NOTE Confidence: 0.97433037

00:16:12.875 --> 00:16:14.075 And even though these standard

NOTE Confidence: 0.97433037

00:16:14.075 --> 00:16:15.275 composites are all intended to

NOTE Confidence: 0.97433037

00:16:15.275 --> 00:16:16.715 broadly capture the same thing,

NOTE Confidence: 0.97433037

00:16:16.715 --> 00:16:17.995 being some aspect of social

NOTE Confidence: 0.97433037

00:16:17.995 --> 00:16:18.495 functioning,

NOTE Confidence: 0.9760254

00:16:19.115 --> 00:16:20.315 they do so by collapsing

NOTE Confidence: 0.9760254

00:16:20.315 --> 00:16:22.415 across many distinct behavioral domains.

NOTE Confidence: 0.9760254

00:16:22.475 --> 00:16:23.675 So in doing so, they

NOTE Confidence: 0.9760254

00:16:23.675 --> 00:16:25.210 might be obscuring these important

NOTE Confidence: 0.9760254

00:16:25.210 --> 00:16:26.570 differences in how the behaviors

NOTE Confidence: 0.9760254

00:16:26.570 --> 00:16:28.270 are relating to underlying biology.

NOTE Confidence: 0.92831516

00:16:29.370 --> 00:16:30.570 So in other words, our

NOTE Confidence: 0.92831516

00:16:30.570 --> 00:16:32.510 article aligned dimensions might provide

NOTE Confidence: 0.92831516

00:16:32.570 --> 00:16:34.030 a means of more precisely

NOTE Confidence: 0.92831516

00:16:34.090 --> 00:16:36.090 pinpointing which behaviors correspond to

NOTE Confidence: 0.92831516

00:16:36.090 --> 00:16:36.990 which biomarkers.

NOTE Confidence: 0.9573218

00:16:39.935 --> 00:16:40.815 So I think there are

NOTE Confidence: 0.9573218

00:16:40.815 --> 00:16:42.654 three broader takeaways from this

NOTE Confidence: 0.9573218

00:16:42.654 --> 00:16:44.735 work. So firstly that RDoC

NOTE Confidence: 0.9573218

00:16:44.735 --> 00:16:45.855 provides a more fine grained

NOTE Confidence: 0.9573218

00:16:45.855 --> 00:16:47.935 and biologically informed framework for

NOTE Confidence: 0.9573218

00:16:47.935 --> 00:16:49.715 conceptualizing clinical phenomena,

NOTE Confidence: 0.9907602

00:16:50.560 --> 00:16:52.240 then the DSM defined domains

NOTE Confidence: 0.9907602

00:16:52.240 --> 00:16:54.000 embedded within many of our

NOTE Confidence: 0.9907602

00:16:54.000 --> 00:16:55.460 existing clinical measures.

NOTE Confidence: 0.98844403

00:16:56.800 --> 00:16:58.480 Second, these findings are suggesting

NOTE Confidence: 0.98844403

00:16:58.480 --> 00:16:59.780 that our existing clinical

NOTE Confidence: 0.96602374

00:17:00.480 --> 00:17:02.340 questionnaires could potentially be reinterpreted

NOTE Confidence: 0.96602374

00:17:02.560 --> 00:17:03.060 dimensionally

NOTE Confidence: 0.9532335

00:17:03.680 --> 00:17:04.880 rather than being limited to

NOTE Confidence: 0.9532335

00:17:04.880 --> 00:17:06.340 their original scoring structures.

NOTE Confidence: 0.968566

00:17:07.385 --> 00:17:08.825 So this means that, we

NOTE Confidence: 0.968566

00:17:08.825 --> 00:17:10.105 might not need entirely new

NOTE Confidence: 0.968566

00:17:10.105 --> 00:17:11.865 datasets or entirely new measurement

NOTE Confidence: 0.968566

00:17:11.865 --> 00:17:13.304 tools to begin moving towards

NOTE Confidence: 0.968566

00:17:13.304 --> 00:17:14.365 dimensional and transdiagnostic

NOTE Confidence: 0.93481445

00:17:14.744 --> 00:17:15.244 approaches.

NOTE Confidence: 0.98944384

00:17:16.265 --> 00:17:17.225 Instead, we might be able

NOTE Confidence: 0.98944384

00:17:17.225 --> 00:17:18.184 to leverage the data and

NOTE Confidence: 0.98944384

00:17:18.184 --> 00:17:19.304 measures that we already have

NOTE Confidence: 0.98944384

00:17:19.304 --> 00:17:20.525 in new and more informative

NOTE Confidence: 0.98944384

00:17:20.585 --> 00:17:21.085 ways.

NOTE Confidence: 0.98255336

00:17:23.150 --> 00:17:24.430 And finally, this work suggests

NOTE Confidence: 0.98255336

00:17:24.430 --> 00:17:25.890 that more granular and biologically

NOTE Confidence: 0.98255336

00:17:26.109 --> 00:17:27.490 informed clinical questionnaires

NOTE Confidence: 0.94609374

00:17:27.790 --> 00:17:29.150 might improve our ability to

NOTE Confidence: 0.94609374

00:17:29.150 --> 00:17:31.890 identify biological mechanisms, underlying observable

NOTE Confidence: 0.94609374

00:17:32.030 --> 00:17:34.190 behaviour, and also strengthen links

NOTE Confidence: 0.94609374

00:17:34.190 --> 00:17:36.850 between behaviours and biological measures.

NOTE Confidence: 0.98073715

00:17:39.365 --> 00:17:40.244 Okay. So I'd like to

NOTE Confidence: 0.98073715

00:17:40.244 --> 00:17:41.605 thank the families who participated

NOTE Confidence: 0.98073715

00:17:41.605 --> 00:17:42.405 in this research, and I'd

NOTE Confidence: 0.98073715

00:17:42.405 --> 00:17:43.205 also like to thank the

NOTE Confidence: 0.98073715

00:17:43.205 --> 00:17:45.925 Hillebrand Foundation, ABCCT team, and

NOTE Confidence: 0.98073715

00:17:45.925 --> 00:17:47.125 the McPartland Lab for all

NOTE Confidence: 0.98073715

00:17:47.125 --> 00:17:48.244 of their support, collaboration, and

NOTE Confidence: 0.98073715

00:17:48.244 --> 00:17:49.445 mentorship, and thank you all

NOTE Confidence: 0.98073715

00:17:49.445 --> 00:17:50.885 for listening. Happy to take

NOTE Confidence: 0.98073715

00:17:50.885 --> 00:17:51.545 one question.

NOTE Confidence: 0.6717529

00:18:04.680 --> 00:18:05.420 Very interesting.

NOTE Confidence: 0.89612633

00:18:06.775 --> 00:18:07.655 One question that I have

NOTE Confidence: 0.89612633

00:18:07.655 --> 00:18:09.255 is, how did you handle

NOTE Confidence: 0.89612633

00:18:09.255 --> 00:18:10.934 sex in those initial factor

NOTE Confidence: 0.89612633

00:18:10.934 --> 00:18:11.975 models? And I guess as

NOTE Confidence: 0.89612633

00:18:11.975 --> 00:18:13.415 part of that question, did

NOTE Confidence: 0.89612633

00:18:13.415 --> 00:18:15.195 you test for measuring variance

NOTE Confidence: 0.70751953

00:18:15.655 --> 00:18:17.035 across males and females?

NOTE Confidence: 0.96352065

00:18:17.575 --> 00:18:19.015 Yeah. Thank you. I'm not

NOTE Confidence: 0.96352065

00:18:19.015 --> 00:18:19.895 sure the mic is working,

NOTE Confidence: 0.96352065

00:18:19.895 --> 00:18:20.695 so I'll repeat it. So

NOTE Confidence: 0.96352065

00:18:20.695 --> 00:18:21.575 you asked how I handled

NOTE Confidence: 0.96352065

00:18:21.575 --> 00:18:22.580 sex in the factor models

NOTE Confidence: 0.96352065

00:18:22.580 --> 00:18:23.619 and whether I tested in

NOTE Confidence: 0.96352065

00:18:23.619 --> 00:18:24.100 variance,

NOTE Confidence: 0.9714966

00:18:24.420 --> 00:18:25.560 across the factor models.

NOTE Confidence: 0.98658335

00:18:26.260 --> 00:18:27.700 Yes. I tested in variance.

NOTE Confidence: 0.98658335

00:18:27.700 --> 00:18:28.900 So with the factor models,

NOTE Confidence: 0.98658335

00:18:28.900 --> 00:18:29.940 I derived them in the

NOTE Confidence: 0.98658335

00:18:29.940 --> 00:18:31.140 whole sample with both of

NOTE Confidence: 0.98658335

00:18:31.140 --> 00:18:31.800 the sexes,

NOTE Confidence: 0.96606445

00:18:32.260 --> 00:18:33.619 combined, and then I ran

NOTE Confidence: 0.96606445

00:18:33.619 --> 00:18:35.160 in variance testing across,

NOTE Confidence: 0.9602539

00:18:35.460 --> 00:18:37.160 age, sex, and also IQ,

NOTE Confidence: 0.7430013

00:18:37.925 --> 00:18:39.465 and results supported

NOTE Confidence: 0.9707113

00:18:40.325 --> 00:18:42.005 strict in variance, across all

NOTE Confidence: 0.9707113

00:18:42.005 --> 00:18:43.285 of those factors. So, yeah,

NOTE Confidence: 0.9707113

00:18:43.285 --> 00:18:44.405 we can we can assume

NOTE Confidence: 0.9707113

00:18:44.405 --> 00:18:45.845 that the factor structure and

NOTE Confidence: 0.9707113

00:18:45.845 --> 00:18:47.605 also the loadings and intercepts

NOTE Confidence: 0.9707113

00:18:47.605 --> 00:18:49.225 are all stable across sex.

NOTE Confidence: 0.8725586

00:18:50.165 --> 00:18:50.665 Yeah.

NOTE Confidence: 0.7305908

00:18:53.900 --> 00:18:54.400 K.

NOTE Confidence: 0.9809093

00:19:03.580 --> 00:19:05.260 Awesome. So, nice to meet

NOTE Confidence: 0.9809093

00:19:05.260 --> 00:19:06.539 everyone. My name is Joey

NOTE Confidence: 0.9809093

00:19:06.539 --> 00:19:08.025 Hefner. I'm really excited to

NOTE Confidence: 0.9809093

00:19:08.025 --> 00:19:08.984 present some of the work

NOTE Confidence: 0.9809093

00:19:08.984 --> 00:19:09.705 that I've been doing here

NOTE Confidence: 0.9809093

00:19:09.705 --> 00:19:11.225 at Yale, in the psychology

NOTE Confidence: 0.9809093

00:19:11.225 --> 00:19:12.025 department. So I'm gonna be

NOTE Confidence: 0.9809093

00:19:12.025 --> 00:19:12.905 talking a little bit about

NOTE Confidence: 0.9809093

00:19:12.905 --> 00:19:14.505 what language reveals about depression

NOTE Confidence: 0.9809093

00:19:14.505 --> 00:19:15.005 trajectories

NOTE Confidence: 0.99384224

00:19:15.305 --> 00:19:16.505 and the impacts of human

NOTE Confidence: 0.99384224

00:19:16.505 --> 00:19:18.045 AI conversations on well-being.

NOTE Confidence: 0.97787476

00:19:19.225 --> 00:19:20.905 So clinicians have long known

NOTE Confidence: 0.97787476

00:19:20.905 --> 00:19:21.750 that language acts as a

NOTE Confidence: 0.97787476

00:19:21.750 --> 00:19:23.270 window into mental states and

NOTE Confidence: 0.97787476

00:19:23.270 --> 00:19:24.310 one of the most promising

NOTE Confidence: 0.97787476

00:19:24.310 --> 00:19:25.910 approaches is to develop prediction

NOTE Confidence: 0.97787476

00:19:25.910 --> 00:19:27.590 tools for clinical disorders such

NOTE Confidence: 0.97787476

00:19:27.590 --> 00:19:28.170 as depression,

NOTE Confidence: 0.97012866

00:19:28.550 --> 00:19:29.690 through the use of naturalistic

NOTE Confidence: 0.97012866

00:19:29.830 --> 00:19:31.670 language. So prior research has

NOTE Confidence: 0.97012866

00:19:31.670 --> 00:19:33.350 shown that emotional language expressed,

NOTE Confidence: 0.97012866

00:19:33.350 --> 00:19:34.630 for example, on social media

NOTE Confidence: 0.97012866

00:19:34.630 --> 00:19:35.830 platforms such as Facebook or

NOTE Confidence: 0.97012866

00:19:35.830 --> 00:19:37.605 Twitter can predict depression status

NOTE Confidence: 0.97012866

00:19:37.605 --> 00:19:39.065 in electronic health records.

NOTE Confidence: 0.9682129

00:19:39.445 --> 00:19:41.205 We also know from EMA

NOTE Confidence: 0.9682129

00:19:41.205 --> 00:19:43.125 data, that sentiment expressed in

NOTE Confidence: 0.9682129

00:19:43.125 --> 00:19:44.984 private text messages between friends

NOTE Confidence: 0.9682129

00:19:45.045 --> 00:19:47.145 improves the prediction of, depression.

NOTE Confidence: 0.8897705

00:19:47.685 --> 00:19:48.965 And lastly, it's been shown

NOTE Confidence: 0.8897705

00:19:48.965 --> 00:19:51.065 that, language and therapy contexts

NOTE Confidence: 0.96479493

00:19:51.400 --> 00:19:52.920 are associated with treatment outcomes.

NOTE Confidence: 0.96479493

00:19:52.920 --> 00:19:54.679 So for example, reduction of

NOTE Confidence: 0.96479493

00:19:54.679 --> 00:19:56.220 use in first person pronouns,

NOTE Confidence: 0.9760539

00:19:56.600 --> 00:19:58.119 predicted better treatment responses on

NOTE Confidence: 0.9760539

00:19:58.119 --> 00:19:59.260 the platform Talkspace.

NOTE Confidence: 0.96987015

00:19:59.960 --> 00:20:01.480 So together, these studies suggest

NOTE Confidence: 0.96987015

00:20:01.480 --> 00:20:02.359 that it may be possible

NOTE Confidence: 0.96987015

00:20:02.359 --> 00:20:03.480 to build tools that predict

NOTE Confidence: 0.96987015

00:20:03.480 --> 00:20:04.380 changes in,

NOTE Confidence: 0.9514688

00:20:05.095 --> 00:20:06.455 depression from language, but these

NOTE Confidence: 0.9514688

00:20:06.455 --> 00:20:07.654 studies rely on really large

NOTE Confidence: 0.9514688

00:20:07.654 --> 00:20:09.014 corpuses of data, so your

NOTE Confidence: 0.9514688

00:20:09.014 --> 00:20:10.615 entire Facebook feeds, for example,

NOTE Confidence: 0.9514688

00:20:10.615 --> 00:20:11.575 or they rely on really

NOTE Confidence: 0.9514688

00:20:11.575 --> 00:20:13.014 sensitive personal information like your

NOTE Confidence: 0.9514688

00:20:13.014 --> 00:20:14.054 private text message or the

NOTE Confidence: 0.9514688

00:20:14.054 --> 00:20:14.875 therapy transcripts.

NOTE Confidence: 0.9757668

00:20:15.335 --> 00:20:16.215 So this led us to

NOTE Confidence: 0.9757668

00:20:16.215 --> 00:20:17.654 a simple question, which is,

NOTE Confidence: 0.9757668

00:20:17.654 --> 00:20:18.774 can we predict these changes

NOTE Confidence: 0.9757668

00:20:18.774 --> 00:20:20.290 in depression using the emotional

NOTE Confidence: 0.9757668

00:20:20.290 --> 00:20:21.810 tone index, but from a

NOTE Confidence: 0.9757668

00:20:21.810 --> 00:20:22.710 shorter task?

NOTE Confidence: 0.99391526

00:20:23.090 --> 00:20:24.050 So we developed about a

NOTE Confidence: 0.99391526

00:20:24.050 --> 00:20:25.330 ten minute task, to see

NOTE Confidence: 0.99391526

00:20:25.330 --> 00:20:26.210 if it contained the amount

NOTE Confidence: 0.99391526

00:20:26.210 --> 00:20:27.330 of variance that we needed

NOTE Confidence: 0.99391526

00:20:27.330 --> 00:20:28.690 to understand these changes in

NOTE Confidence: 0.99391526

00:20:28.690 --> 00:20:29.190 depression.

NOTE Confidence: 0.97007173

00:20:29.810 --> 00:20:31.090 So this approach was led

NOTE Confidence: 0.97007173

00:20:31.090 --> 00:20:32.450 by a now clinical PhD

NOTE Confidence: 0.97007173

00:20:32.450 --> 00:20:33.810 student in the psychology department

NOTE Confidence: 0.97007173

00:20:33.810 --> 00:20:35.010 here at Yale, Ji Hyun

NOTE Confidence: 0.97007173

00:20:35.010 --> 00:20:36.195 Hur. So we what we

NOTE Confidence: 0.97007173

00:20:36.195 --> 00:20:37.155 did was we wanted to

NOTE Confidence: 0.97007173

00:20:37.155 --> 00:20:38.515 adopt the PHQ nine, which

NOTE Confidence: 0.97007173

00:20:38.515 --> 00:20:39.875 is a validated short form

NOTE Confidence: 0.97007173

00:20:39.875 --> 00:20:41.795 questionnaire assessing depression severity in

NOTE Confidence: 0.97007173

00:20:41.795 --> 00:20:43.234 the general population, and we

NOTE Confidence: 0.97007173

00:20:43.234 --> 00:20:44.115 wanted to do it to

NOTE Confidence: 0.97007173

00:20:44.115 --> 00:20:45.174 open ended responses.

NOTE Confidence: 0.9929865

00:20:45.635 --> 00:20:46.515 So just to show you

NOTE Confidence: 0.9929865

00:20:46.515 --> 00:20:47.635 two items in the PHQ

NOTE Confidence: 0.9929865

00:20:47.635 --> 00:20:48.674 nine, these are the cardinal

NOTE Confidence: 0.9929865

00:20:48.674 --> 00:20:50.035 symptoms for depression. So the

NOTE Confidence: 0.9929865

00:20:50.035 --> 00:20:50.515 first one,

NOTE Confidence: 0.9606236

00:20:51.030 --> 00:20:51.910 asks you to rate how

NOTE Confidence: 0.9606236

00:20:51.910 --> 00:20:52.869 often you've been bothered by

NOTE Confidence: 0.9606236

00:20:52.869 --> 00:20:54.390 the following problems, little interest

NOTE Confidence: 0.9606236

00:20:54.390 --> 00:20:55.670 or pleasure in doing things

NOTE Confidence: 0.9606236

00:20:55.670 --> 00:20:56.869 over the past two weeks

NOTE Confidence: 0.9606236

00:20:56.869 --> 00:20:58.230 or feeling down, depressed, or

NOTE Confidence: 0.9606236

00:20:58.230 --> 00:20:59.770 hopeless is two separate items.

NOTE Confidence: 0.9638954

00:21:00.150 --> 00:21:01.190 And our goal was to

NOTE Confidence: 0.9638954

00:21:01.190 --> 00:21:02.950 translate these into neutrally toned

NOTE Confidence: 0.9638954

00:21:02.950 --> 00:21:04.470 questions that allow participants to

NOTE Confidence: 0.9638954

00:21:04.470 --> 00:21:06.365 express positive or negative sentiment

NOTE Confidence: 0.9638954

00:21:06.365 --> 00:21:07.885 regarding these symptoms. So the

NOTE Confidence: 0.9638954

00:21:07.885 --> 00:21:09.085 open ended versions of these

NOTE Confidence: 0.9638954

00:21:09.085 --> 00:21:10.044 are could you describe your

NOTE Confidence: 0.9638954

00:21:10.044 --> 00:21:10.924 gender mood in the past

NOTE Confidence: 0.9638954

00:21:10.924 --> 00:21:12.445 two weeks, and, you know,

NOTE Confidence: 0.9638954

00:21:12.445 --> 00:21:13.885 participants type or write a

NOTE Confidence: 0.9638954

00:21:13.885 --> 00:21:15.085 bit. And then the second

NOTE Confidence: 0.9638954

00:21:15.085 --> 00:21:15.725 one is how would you

NOTE Confidence: 0.9638954

00:21:15.725 --> 00:21:16.684 describe your level of interest,

NOTE Confidence: 0.9638954

00:21:17.020 --> 00:21:17.980 and things in the past

NOTE Confidence: 0.9638954

00:21:17.980 --> 00:21:18.559 two weeks.

NOTE Confidence: 0.9762008

00:21:18.859 --> 00:21:19.820 So the goal is that

NOTE Confidence: 0.9762008

00:21:19.820 --> 00:21:21.600 maybe this can contextualize participants'

NOTE Confidence: 0.9762008

00:21:21.660 --> 00:21:22.700 ratings that they're giving you

NOTE Confidence: 0.9762008

00:21:22.700 --> 00:21:23.820 on the PHQ nine, which

NOTE Confidence: 0.9762008

00:21:23.820 --> 00:21:24.859 are designed to follow the

NOTE Confidence: 0.9762008

00:21:24.859 --> 00:21:25.820 DSM five,

NOTE Confidence: 0.99113464

00:21:26.220 --> 00:21:28.000 symptoms and, you know, contextualize

NOTE Confidence: 0.99113464

00:21:28.140 --> 00:21:29.660 what those depression severity or

NOTE Confidence: 0.99113464

00:21:29.660 --> 00:21:30.940 symptoms mean in their daily

NOTE Confidence: 0.99113464

00:21:30.940 --> 00:21:31.440 life.

NOTE Confidence: 0.96191406

00:21:32.435 --> 00:21:33.555 So can we predict the

NOTE Confidence: 0.96191406

00:21:33.555 --> 00:21:34.695 change? For the methodology,

NOTE Confidence: 0.9738075

00:21:34.994 --> 00:21:36.755 we had online participants do

NOTE Confidence: 0.9738075

00:21:36.755 --> 00:21:38.275 an initial study where they

NOTE Confidence: 0.9738075

00:21:38.275 --> 00:21:39.715 completed the same questionnaire, the

NOTE Confidence: 0.9738075

00:21:39.715 --> 00:21:40.835 PHQ nine, as sort of

NOTE Confidence: 0.9738075

00:21:40.835 --> 00:21:42.435 our metric of how, their

NOTE Confidence: 0.9738075

00:21:42.435 --> 00:21:43.875 depression severity is for their

NOTE Confidence: 0.9738075

00:21:43.875 --> 00:21:45.240 symptoms, as well as the

NOTE Confidence: 0.9738075

00:21:45.240 --> 00:21:46.440 open ended questions that we

NOTE Confidence: 0.9738075

00:21:46.440 --> 00:21:47.820 developed based on the PHQ-nine.

NOTE Confidence: 0.9863739

00:21:48.600 --> 00:21:49.560 And then we followed up

NOTE Confidence: 0.9863739

00:21:49.560 --> 00:21:50.600 with them three weeks later

NOTE Confidence: 0.9863739

00:21:50.600 --> 00:21:51.800 where they just completed the

NOTE Confidence: 0.9863739

00:21:51.800 --> 00:21:52.300 PHQ-nine

NOTE Confidence: 0.9639937

00:21:52.680 --> 00:21:53.720 again so we could assess

NOTE Confidence: 0.9639937

00:21:53.720 --> 00:21:55.260 that follow-up depression severity.

NOTE Confidence: 0.95637816

00:21:56.119 --> 00:21:57.080 We did this over two

NOTE Confidence: 0.95637816

00:21:57.080 --> 00:21:59.115 samples. So, in study one,

NOTE Confidence: 0.95637816

00:21:59.434 --> 00:22:00.554 you can see the retention

NOTE Confidence: 0.95637816

00:22:00.554 --> 00:22:01.755 rate was about ninety percent

NOTE Confidence: 0.95637816

00:22:01.755 --> 00:22:02.715 over the three week period

NOTE Confidence: 0.95637816

00:22:02.715 --> 00:22:03.915 which is great. And for

NOTE Confidence: 0.95637816

00:22:03.915 --> 00:22:05.275 study two, it's a little

NOTE Confidence: 0.95637816

00:22:05.275 --> 00:22:06.734 lower about seventy two percent.

NOTE Confidence: 0.98808646

00:22:07.115 --> 00:22:08.395 And one thing to clarify

NOTE Confidence: 0.98808646

00:22:08.395 --> 00:22:09.434 about the use of study

NOTE Confidence: 0.98808646

00:22:09.434 --> 00:22:10.395 two is there was a

NOTE Confidence: 0.98808646

00:22:10.395 --> 00:22:11.755 small difference. We did want

NOTE Confidence: 0.98808646

00:22:11.755 --> 00:22:13.035 to assess the PHQ nine

NOTE Confidence: 0.98808646

00:22:13.035 --> 00:22:14.234 and the open ended questions

NOTE Confidence: 0.98808646

00:22:14.234 --> 00:22:15.490 on different days just to

NOTE Confidence: 0.98808646

00:22:15.490 --> 00:22:16.850 avoid having people make direct

NOTE Confidence: 0.98808646

00:22:16.850 --> 00:22:18.289 comparisons to them. So for

NOTE Confidence: 0.98808646

00:22:18.289 --> 00:22:19.650 the initial portion in study

NOTE Confidence: 0.98808646

00:22:19.650 --> 00:22:20.850 two, participants did both of

NOTE Confidence: 0.98808646

00:22:20.850 --> 00:22:21.970 those a day apart. So

NOTE Confidence: 0.98808646

00:22:21.970 --> 00:22:22.690 we did lose a little

NOTE Confidence: 0.98808646

00:22:22.690 --> 00:22:24.210 bit of retention, by recruiting

NOTE Confidence: 0.98808646

00:22:24.210 --> 00:22:25.409 four hundred and only three

NOTE Confidence: 0.98808646

00:22:25.409 --> 00:22:26.450 hundred and twenty four did

NOTE Confidence: 0.98808646

00:22:26.450 --> 00:22:27.250 both of them on a

NOTE Confidence: 0.98808646

00:22:27.250 --> 00:22:28.150 day to day basis.

NOTE Confidence: 0.98062295

00:22:28.855 --> 00:22:30.215 So this is our, our

NOTE Confidence: 0.98062295

00:22:30.215 --> 00:22:31.095 studies that we're gonna be

NOTE Confidence: 0.98062295

00:22:31.095 --> 00:22:32.775 analyzing over. So for the

NOTE Confidence: 0.98062295

00:22:32.775 --> 00:22:34.135 results on the x axis,

NOTE Confidence: 0.98062295

00:22:34.135 --> 00:22:35.174 I'm showing you the beta

NOTE Confidence: 0.98062295

00:22:35.174 --> 00:22:37.494 coefficients from a regression model

NOTE Confidence: 0.98062295

00:22:37.494 --> 00:22:38.855 where we're predicting the follow-up

NOTE Confidence: 0.98062295

00:22:38.855 --> 00:22:40.135 PHQ nine score as a

NOTE Confidence: 0.98062295

00:22:40.135 --> 00:22:41.575 function of the initial PHQ

NOTE Confidence: 0.98062295

00:22:41.575 --> 00:22:43.169 nine score plus the human

NOTE Confidence: 0.98062295

00:22:43.169 --> 00:22:44.369 sentiment score. And what that

NOTE Confidence: 0.98062295

00:22:44.369 --> 00:22:45.409 means is that is the

NOTE Confidence: 0.98062295

00:22:45.409 --> 00:22:47.409 average emotional tone as rated

NOTE Confidence: 0.98062295

00:22:47.409 --> 00:22:48.149 by external,

NOTE Confidence: 0.9756525

00:22:48.450 --> 00:22:50.369 humans for the free text

NOTE Confidence: 0.9756525

00:22:50.369 --> 00:22:51.570 that you gave. So we

NOTE Confidence: 0.9756525

00:22:51.570 --> 00:22:52.850 take all nine items, we

NOTE Confidence: 0.9756525

00:22:52.850 --> 00:22:54.049 average them, and that average

NOTE Confidence: 0.9756525

00:22:54.049 --> 00:22:56.085 score represents how positive relative

NOTE Confidence: 0.9756525

00:22:56.085 --> 00:22:57.684 to negative that text is,

NOTE Confidence: 0.9756525

00:22:57.845 --> 00:22:58.744 for that individual.

NOTE Confidence: 0.9484863

00:22:59.684 --> 00:23:00.184 So,

NOTE Confidence: 0.83081055

00:23:00.484 --> 00:23:00.984 unsurprisingly,

NOTE Confidence: 0.93188477

00:23:01.684 --> 00:23:03.205 initial PHQ nine is highly

NOTE Confidence: 0.93188477

00:23:03.205 --> 00:23:04.725 correlated with the follow-up so

NOTE Confidence: 0.93188477

00:23:04.725 --> 00:23:05.365 this is a very,

NOTE Confidence: 0.96972656

00:23:06.005 --> 00:23:07.605 strong predictor. So the critical

NOTE Confidence: 0.96972656

00:23:07.605 --> 00:23:08.484 part is does the human

NOTE Confidence: 0.96972656

00:23:08.484 --> 00:23:10.744 sentiment score add, predictive variance?

NOTE Confidence: 0.9692312

00:23:11.059 --> 00:23:11.859 And the answer is that

NOTE Confidence: 0.9692312

00:23:11.859 --> 00:23:13.640 it does for both, studies.

NOTE Confidence: 0.9692312

00:23:13.940 --> 00:23:15.059 So in other words, if

NOTE Confidence: 0.9692312

00:23:15.059 --> 00:23:16.020 you had two people who

NOTE Confidence: 0.9692312

00:23:16.020 --> 00:23:17.299 had the same initial PHQ

NOTE Confidence: 0.9692312

00:23:17.299 --> 00:23:18.580 nine score, if one of

NOTE Confidence: 0.9692312

00:23:18.580 --> 00:23:19.940 them talked more positively about

NOTE Confidence: 0.9692312

00:23:19.940 --> 00:23:21.299 their depression symptoms and one

NOTE Confidence: 0.9692312

00:23:21.299 --> 00:23:22.900 talked more negatively, it predicts

NOTE Confidence: 0.9692312

00:23:22.900 --> 00:23:24.119 the person who talked positively

NOTE Confidence: 0.9692312

00:23:24.179 --> 00:23:25.095 will have a decrease in

NOTE Confidence: 0.9692312

00:23:25.255 --> 00:23:26.534 depression severity after a three

NOTE Confidence: 0.9692312

00:23:26.534 --> 00:23:27.655 week period and the other

NOTE Confidence: 0.9692312

00:23:27.655 --> 00:23:28.554 will have an increase.

NOTE Confidence: 0.97901726

00:23:28.934 --> 00:23:29.815 Just to show this in

NOTE Confidence: 0.97901726

00:23:29.815 --> 00:23:31.255 a slightly different way, I

NOTE Confidence: 0.97901726

00:23:31.255 --> 00:23:32.534 can plot whether the model

NOTE Confidence: 0.97901726

00:23:32.534 --> 00:23:33.975 is predicting a PHQ nine

NOTE Confidence: 0.97901726

00:23:33.975 --> 00:23:35.255 increase, no change, or a

NOTE Confidence: 0.97901726

00:23:35.255 --> 00:23:36.855 decrease and showing you the

NOTE Confidence: 0.97901726

00:23:36.855 --> 00:23:38.294 actual PHQ nine change on

NOTE Confidence: 0.97901726

00:23:38.294 --> 00:23:39.559 the x axis. And you

NOTE Confidence: 0.97901726

00:23:39.559 --> 00:23:40.280 can see that you get

NOTE Confidence: 0.97901726

00:23:40.280 --> 00:23:41.400 about a one point five,

NOTE Confidence: 0.97901726

00:23:41.720 --> 00:23:43.000 change in the PHQ nine

NOTE Confidence: 0.97901726

00:23:43.000 --> 00:23:44.600 score. For reference, the total

NOTE Confidence: 0.97901726

00:23:44.600 --> 00:23:46.119 is, twenty four for the

NOTE Confidence: 0.97901726

00:23:46.119 --> 00:23:47.559 most severe depression and zero

NOTE Confidence: 0.97901726

00:23:47.559 --> 00:23:48.380 for the least.

NOTE Confidence: 0.98029435

00:23:49.240 --> 00:23:50.280 So in short, I think

NOTE Confidence: 0.98029435

00:23:50.280 --> 00:23:51.480 this is good evidence that

NOTE Confidence: 0.98029435

00:23:51.480 --> 00:23:53.020 the negative emotional tone,

NOTE Confidence: 0.9750715

00:23:53.400 --> 00:23:55.055 in these descriptions of your

NOTE Confidence: 0.9750715

00:23:55.055 --> 00:23:57.615 depression symptoms, predicted increased depression

NOTE Confidence: 0.9750715

00:23:57.615 --> 00:23:58.994 severity three weeks later.

NOTE Confidence: 0.9859619

00:23:59.775 --> 00:24:00.494 Now the way we did

NOTE Confidence: 0.9859619

00:24:00.494 --> 00:24:01.535 this is we had external

NOTE Confidence: 0.9859619

00:24:01.535 --> 00:24:02.355 human raters.

NOTE Confidence: 0.96644425

00:24:02.655 --> 00:24:03.375 They take a long time

NOTE Confidence: 0.96644425

00:24:03.375 --> 00:24:04.335 to collect. They're kind of

NOTE Confidence: 0.96644425

00:24:04.335 --> 00:24:05.615 expensive. And so we wondered,

NOTE Confidence: 0.96644425

00:24:05.615 --> 00:24:06.895 could we automate this process

NOTE Confidence: 0.96644425

00:24:06.895 --> 00:24:08.175 using the leading models at

NOTE Confidence: 0.96644425

00:24:08.175 --> 00:24:08.835 the time?

NOTE Confidence: 0.9964694

00:24:09.630 --> 00:24:10.910 So can we automate this?

NOTE Confidence: 0.9964694

00:24:10.910 --> 00:24:11.869 For those who are familiar

NOTE Confidence: 0.9964694

00:24:11.869 --> 00:24:12.770 with text analysis,

NOTE Confidence: 0.83774143

00:24:13.150 --> 00:24:14.510 the Luke twenty two was

NOTE Confidence: 0.83774143

00:24:14.510 --> 00:24:15.810 the leading one. Yeah.

NOTE Confidence: 0.966673

00:24:18.990 --> 00:24:19.869 The Luke two is a

NOTE Confidence: 0.966673

00:24:19.869 --> 00:24:21.310 dictionary based approach. So the

NOTE Confidence: 0.966673

00:24:21.310 --> 00:24:22.109 way that it works, just

NOTE Confidence: 0.966673

00:24:22.109 --> 00:24:23.070 to give you one real

NOTE Confidence: 0.966673

00:24:23.070 --> 00:24:24.705 participant example, this is them

NOTE Confidence: 0.966673

00:24:24.705 --> 00:24:26.065 giving their open ended response

NOTE Confidence: 0.966673

00:24:26.065 --> 00:24:27.345 to that first question. So

NOTE Confidence: 0.966673

00:24:27.345 --> 00:24:28.145 they say my move has

NOTE Confidence: 0.966673

00:24:28.145 --> 00:24:28.865 been lower in the past

NOTE Confidence: 0.966673

00:24:28.865 --> 00:24:29.585 week but it was a

NOTE Confidence: 0.966673

00:24:29.585 --> 00:24:30.705 bit better the week before.

NOTE Confidence: 0.966673

00:24:30.705 --> 00:24:31.825 I find that it fluctuates

NOTE Confidence: 0.966673

00:24:31.825 --> 00:24:32.705 at the moment. I've been

NOTE Confidence: 0.966673

00:24:32.705 --> 00:24:34.005 feeling tired more recently.

NOTE Confidence: 0.96316004

00:24:34.465 --> 00:24:35.585 What the loop does is

NOTE Confidence: 0.96316004

00:24:35.585 --> 00:24:37.250 it looks for key emotional

NOTE Confidence: 0.96316004

00:24:37.390 --> 00:24:38.690 terms based on a predefined

NOTE Confidence: 0.96316004

00:24:38.750 --> 00:24:39.790 dictionary so we can have

NOTE Confidence: 0.96316004

00:24:39.790 --> 00:24:41.310 a positive emotion percentage and

NOTE Confidence: 0.96316004

00:24:41.310 --> 00:24:42.609 a negative emotion percentage.

NOTE Confidence: 0.9629135

00:24:42.910 --> 00:24:43.869 In this case, only the

NOTE Confidence: 0.9629135

00:24:43.869 --> 00:24:45.810 word tired triggers a connection.

NOTE Confidence: 0.9629135

00:24:46.109 --> 00:24:47.150 So the rating that loop

NOTE Confidence: 0.9629135

00:24:47.150 --> 00:24:48.030 gives you is this is

NOTE Confidence: 0.9629135

00:24:48.030 --> 00:24:49.390 zero percent positive on the

NOTE Confidence: 0.9629135

00:24:49.390 --> 00:24:51.550 expression but three percent, negative,

NOTE Confidence: 0.9629135

00:24:51.550 --> 00:24:52.645 which is that what is

NOTE Confidence: 0.9629135

00:24:52.645 --> 00:24:54.005 the total proportion of emotion

NOTE Confidence: 0.9629135

00:24:54.005 --> 00:24:55.205 words to the total number

NOTE Confidence: 0.9629135

00:24:55.205 --> 00:24:56.085 of words you used. So

NOTE Confidence: 0.9629135

00:24:56.085 --> 00:24:57.045 that's the metric that Luke

NOTE Confidence: 0.9629135

00:24:57.045 --> 00:24:57.845 used, which was the leading

NOTE Confidence: 0.9629135

00:24:57.845 --> 00:24:58.744 one at the time.

NOTE Confidence: 0.96869576

00:24:59.285 --> 00:24:59.925 And at the time we

NOTE Confidence: 0.96869576

00:24:59.925 --> 00:25:01.125 were collecting the data, chat

NOTE Confidence: 0.96869576

00:25:01.125 --> 00:25:01.925 g b t had just

NOTE Confidence: 0.96869576

00:25:01.925 --> 00:25:03.045 been released, so we wanted

NOTE Confidence: 0.96869576

00:25:03.045 --> 00:25:04.244 to compare this against that

NOTE Confidence: 0.96869576

00:25:04.244 --> 00:25:05.429 model. So this was done

NOTE Confidence: 0.96869576

00:25:05.429 --> 00:25:06.789 in September of twenty twenty

NOTE Confidence: 0.96869576

00:25:06.789 --> 00:25:07.990 three for reference and using

NOTE Confidence: 0.96869576

00:25:07.990 --> 00:25:09.609 chat gbt three point five.

NOTE Confidence: 0.97867024

00:25:10.710 --> 00:25:11.350 And so what we did

NOTE Confidence: 0.97867024

00:25:11.350 --> 00:25:12.549 was we gave chat gbt

NOTE Confidence: 0.97867024

00:25:12.549 --> 00:25:13.990 these instructions to sort of

NOTE Confidence: 0.97867024

00:25:13.990 --> 00:25:15.770 map onto the loop, mappings.

NOTE Confidence: 0.97867024

00:25:16.070 --> 00:25:17.529 So give us two integer

NOTE Confidence: 0.97867024

00:25:17.590 --> 00:25:19.450 ratings from zero to ten,

NOTE Confidence: 0.95576173

00:25:19.835 --> 00:25:21.115 on both scales. So for

NOTE Confidence: 0.95576173

00:25:21.115 --> 00:25:23.035 example, the chat gbt rated

NOTE Confidence: 0.95576173

00:25:23.035 --> 00:25:24.635 this, utterance as a two

NOTE Confidence: 0.95576173

00:25:24.635 --> 00:25:25.695 out of ten on positivity,

NOTE Confidence: 0.9826253

00:25:26.315 --> 00:25:27.355 so not very positive, and

NOTE Confidence: 0.9826253

00:25:27.355 --> 00:25:28.075 a seven out of ten

NOTE Confidence: 0.9826253

00:25:28.075 --> 00:25:28.734 on negativity.

NOTE Confidence: 0.95951337

00:25:29.195 --> 00:25:30.475 So we're basically just seeing

NOTE Confidence: 0.95951337

00:25:30.475 --> 00:25:32.075 can the, outputs of these

NOTE Confidence: 0.95951337

00:25:32.075 --> 00:25:32.734 two programs

NOTE Confidence: 0.9839003

00:25:33.330 --> 00:25:34.690 recapitulate the pattern of results

NOTE Confidence: 0.9839003

00:25:34.690 --> 00:25:35.409 that we saw with our

NOTE Confidence: 0.9839003

00:25:35.409 --> 00:25:36.150 human raters.

NOTE Confidence: 0.9604398

00:25:36.929 --> 00:25:37.730 So if we first look

NOTE Confidence: 0.9604398

00:25:37.730 --> 00:25:38.929 at the loop twenty two,

NOTE Confidence: 0.9604398

00:25:38.929 --> 00:25:39.890 we have the same regression

NOTE Confidence: 0.9604398

00:25:39.890 --> 00:25:41.090 model. We're just replacing the

NOTE Confidence: 0.9604398

00:25:41.090 --> 00:25:42.130 sentiment score with the loop

NOTE Confidence: 0.9604398

00:25:42.130 --> 00:25:42.630 prediction.

NOTE Confidence: 0.9761032

00:25:43.250 --> 00:25:44.049 And we can see that

NOTE Confidence: 0.9761032

00:25:44.049 --> 00:25:45.330 the loop model is unable

NOTE Confidence: 0.9761032

00:25:45.330 --> 00:25:46.850 to explain any variance in

NOTE Confidence: 0.9761032

00:25:46.850 --> 00:25:48.529 follow ups on the, depression

NOTE Confidence: 0.9761032

00:25:48.529 --> 00:25:50.244 status. So that means that

NOTE Confidence: 0.9761032

00:25:50.244 --> 00:25:51.925 just getting the key emotional

NOTE Confidence: 0.9761032

00:25:51.925 --> 00:25:53.205 words isn't enough in order

NOTE Confidence: 0.9761032

00:25:53.205 --> 00:25:54.665 to predict changes in depression,

NOTE Confidence: 0.9761032

00:25:54.725 --> 00:25:55.685 at least using the small

NOTE Confidence: 0.9761032

00:25:55.685 --> 00:25:56.484 amount of data that we

NOTE Confidence: 0.9761032

00:25:56.484 --> 00:25:57.525 have. Luke tends to use

NOTE Confidence: 0.9761032

00:25:57.525 --> 00:25:58.984 larger corpuses for example.

NOTE Confidence: 0.8689372

00:25:59.685 --> 00:26:00.825 What about chat GBT?

NOTE Confidence: 0.9665606

00:26:01.170 --> 00:26:02.610 Well chat gbt was able

NOTE Confidence: 0.9665606

00:26:02.610 --> 00:26:03.970 to recapitulate the same pattern

NOTE Confidence: 0.9665606

00:26:03.970 --> 00:26:04.850 of results that we saw

NOTE Confidence: 0.9665606

00:26:04.850 --> 00:26:06.050 so you get additional variance

NOTE Confidence: 0.9665606

00:26:06.050 --> 00:26:06.930 but this time it was

NOTE Confidence: 0.9665606

00:26:06.930 --> 00:26:08.050 just done in an automated

NOTE Confidence: 0.9665606

00:26:08.050 --> 00:26:08.550 way.

NOTE Confidence: 0.95424676

00:26:09.170 --> 00:26:10.450 So why why would this

NOTE Confidence: 0.95424676

00:26:10.450 --> 00:26:11.650 be? And the short answer

NOTE Confidence: 0.95424676

00:26:11.650 --> 00:26:13.250 is that chat gbt sentiment

NOTE Confidence: 0.95424676

00:26:13.250 --> 00:26:14.690 ratings are highly correlated with

NOTE Confidence: 0.95424676

00:26:14.690 --> 00:26:16.205 our external human raters. So

NOTE Confidence: 0.95424676

00:26:16.205 --> 00:26:17.165 in our data set as

NOTE Confidence: 0.95424676

00:26:17.165 --> 00:26:17.965 well as some others that

NOTE Confidence: 0.95424676

00:26:17.965 --> 00:26:19.725 we've done, the correlation's around

NOTE Confidence: 0.95424676

00:26:19.725 --> 00:26:20.765 point nine five, point nine

NOTE Confidence: 0.95424676

00:26:20.765 --> 00:26:22.125 six which is quite strong,

NOTE Confidence: 0.95424676

00:26:22.125 --> 00:26:23.565 whereas for reference the Luke

NOTE Confidence: 0.95424676

00:26:23.565 --> 00:26:25.005 correlation is only about point

NOTE Confidence: 0.95424676

00:26:25.005 --> 00:26:26.605 six. So in other words,

NOTE Confidence: 0.95424676

00:26:26.605 --> 00:26:27.325 you miss a lot of

NOTE Confidence: 0.95424676

00:26:27.325 --> 00:26:28.445 the variance when it comes

NOTE Confidence: 0.95424676

00:26:28.445 --> 00:26:29.565 to sentiment ratings by not

NOTE Confidence: 0.95424676

00:26:29.565 --> 00:26:31.085 taking into account the entire

NOTE Confidence: 0.95424676

00:26:31.085 --> 00:26:31.585 context

NOTE Confidence: 0.94731987

00:26:32.150 --> 00:26:33.429 of what's being said not

NOTE Confidence: 0.94731987

00:26:33.429 --> 00:26:34.650 just the emotional words.

NOTE Confidence: 0.94520974

00:26:35.590 --> 00:26:36.549 One thing to note is

NOTE Confidence: 0.94520974

00:26:36.549 --> 00:26:37.750 that I think Chattopbt is

NOTE Confidence: 0.94520974

00:26:37.750 --> 00:26:38.470 really good at this as

NOTE Confidence: 0.94520974

00:26:38.470 --> 00:26:39.429 well as other models which

NOTE Confidence: 0.94520974

00:26:39.429 --> 00:26:40.549 I'm happy to talk about.

NOTE Confidence: 0.94520974

00:26:40.549 --> 00:26:41.830 For this dataset this costs

NOTE Confidence: 0.94520974

00:26:41.830 --> 00:26:42.710 us less than a dollar,

NOTE Confidence: 0.94520974

00:26:42.950 --> 00:26:44.230 for doing the sentiment analysis

NOTE Confidence: 0.94520974

00:26:44.230 --> 00:26:44.789 so I think it's a

NOTE Confidence: 0.94520974

00:26:44.789 --> 00:26:46.295 really promising approach for clinicians

NOTE Confidence: 0.94520974

00:26:46.295 --> 00:26:47.575 to begin considering if they

NOTE Confidence: 0.94520974

00:26:47.575 --> 00:26:48.475 want to do this.

NOTE Confidence: 0.956902

00:26:49.815 --> 00:26:51.174 So we've covered one way

NOTE Confidence: 0.956902

00:26:51.174 --> 00:26:52.135 that language can be used

NOTE Confidence: 0.956902

00:26:52.135 --> 00:26:52.934 as a window in our

NOTE Confidence: 0.956902

00:26:52.934 --> 00:26:54.615 mental states and given what

NOTE Confidence: 0.956902

00:26:54.615 --> 00:26:55.655 we just talked about one

NOTE Confidence: 0.956902

00:26:55.655 --> 00:26:57.255 obvious extension is to consider

NOTE Confidence: 0.956902

00:26:57.255 --> 00:26:58.715 how human AI interactions

NOTE Confidence: 0.96238613

00:26:59.095 --> 00:27:00.054 are gonna be playing a

NOTE Confidence: 0.96238613

00:27:00.054 --> 00:27:01.710 role. So I'm sure many

NOTE Confidence: 0.96238613

00:27:01.710 --> 00:27:02.850 of you have had conversations

NOTE Confidence: 0.96238613

00:27:02.990 --> 00:27:04.430 of both personal and professional

NOTE Confidence: 0.96238613

00:27:04.430 --> 00:27:05.230 use of how we're gonna

NOTE Confidence: 0.96238613

00:27:05.230 --> 00:27:06.350 use these large language models

NOTE Confidence: 0.96238613

00:27:06.350 --> 00:27:07.410 we have in the t32,

NOTE Confidence: 0.8195801

00:27:08.030 --> 00:27:08.530 meetings.

NOTE Confidence: 0.98461914

00:27:08.910 --> 00:27:10.270 And, the reason this is

NOTE Confidence: 0.98461914

00:27:10.270 --> 00:27:11.790 really important to consider is

NOTE Confidence: 0.98461914

00:27:11.790 --> 00:27:12.930 that a recent review,

NOTE Confidence: 0.9980469

00:27:13.325 --> 00:27:14.305 relatively recent,

NOTE Confidence: 0.978952

00:27:14.925 --> 00:27:16.205 is showing that the use

NOTE Confidence: 0.978952

00:27:16.205 --> 00:27:17.965 case of these LLMs, emotional

NOTE Confidence: 0.978952

00:27:17.965 --> 00:27:19.165 topics are on the rise.

NOTE Confidence: 0.978952

00:27:19.165 --> 00:27:19.805 So if you look at

NOTE Confidence: 0.978952

00:27:19.805 --> 00:27:20.925 the top five use cases

NOTE Confidence: 0.978952

00:27:20.925 --> 00:27:22.685 in twenty twenty four, therapy

NOTE Confidence: 0.978952

00:27:22.685 --> 00:27:23.965 and companionship is there, but

NOTE Confidence: 0.978952

00:27:23.965 --> 00:27:24.765 there's a lot of other

NOTE Confidence: 0.978952

00:27:24.765 --> 00:27:26.125 things like generating ideas or

NOTE Confidence: 0.978952

00:27:26.125 --> 00:27:27.005 using it as a search

NOTE Confidence: 0.978952

00:27:27.005 --> 00:27:28.859 engine or exploring topics. Whereas

NOTE Confidence: 0.978952

00:27:28.859 --> 00:27:29.820 you can see in twenty

NOTE Confidence: 0.978952

00:27:29.820 --> 00:27:31.500 twenty five, the dominant use

NOTE Confidence: 0.978952

00:27:31.500 --> 00:27:32.780 cases are for this personal

NOTE Confidence: 0.978952

00:27:32.780 --> 00:27:34.540 and professional support. So people

NOTE Confidence: 0.978952

00:27:34.540 --> 00:27:35.900 are using these for, you

NOTE Confidence: 0.978952

00:27:35.900 --> 00:27:37.340 know, assistance in this way.

NOTE Confidence: 0.978952

00:27:37.340 --> 00:27:38.380 So we had a very

NOTE Confidence: 0.978952

00:27:38.380 --> 00:27:39.820 simple question, which is how

NOTE Confidence: 0.978952

00:27:39.820 --> 00:27:41.680 do human AI interactions impact

NOTE Confidence: 0.978952

00:27:41.820 --> 00:27:42.720 people's well-being?

NOTE Confidence: 0.99306643

00:27:43.565 --> 00:27:45.184 So for our experimental design,

NOTE Confidence: 0.94750977

00:27:45.565 --> 00:27:45.804 we,

NOTE Confidence: 0.9876709

00:27:46.924 --> 00:27:48.125 derived a list of topics

NOTE Confidence: 0.9876709

00:27:48.125 --> 00:27:49.085 that people were gonna talk

NOTE Confidence: 0.9876709

00:27:49.085 --> 00:27:50.465 about from some self disclosure

NOTE Confidence: 0.9876709

00:27:50.525 --> 00:27:51.025 research.

NOTE Confidence: 0.9972819

00:27:51.645 --> 00:27:52.605 The goal here is just

NOTE Confidence: 0.9972819

00:27:52.605 --> 00:27:53.905 that it varies in positivity.

NOTE Confidence: 0.9675293

00:27:54.445 --> 00:27:55.804 So some topics like talking

NOTE Confidence: 0.9675293

00:27:55.804 --> 00:27:57.005 about things you're grateful for

NOTE Confidence: 0.9675293

00:27:57.005 --> 00:27:58.205 or something you're proud about

NOTE Confidence: 0.9675293

00:27:58.205 --> 00:27:58.950 in your life are quite

NOTE Confidence: 0.9675293

00:27:58.950 --> 00:27:59.450 positive.

NOTE Confidence: 0.92878217

00:27:59.909 --> 00:28:00.789 And you know the more

NOTE Confidence: 0.92878217

00:28:00.789 --> 00:28:02.549 negative ones are, talking about

NOTE Confidence: 0.92878217

00:28:02.549 --> 00:28:03.590 a time you felt guilty

NOTE Confidence: 0.92878217

00:28:03.590 --> 00:28:04.470 or a time someone hurt

NOTE Confidence: 0.92878217

00:28:04.470 --> 00:28:05.690 your feelings for example.

NOTE Confidence: 0.9562744

00:28:06.549 --> 00:28:07.590 The the way the methods

NOTE Confidence: 0.9562744

00:28:07.590 --> 00:28:08.549 work is we had one

NOTE Confidence: 0.9562744

00:28:08.549 --> 00:28:09.990 group of participants engage in

NOTE Confidence: 0.9562744

00:28:09.990 --> 00:28:11.909 chatbot conversations. This was with

NOTE Confidence: 0.9562744

00:28:11.909 --> 00:28:13.990 GPT four in January twenty

NOTE Confidence: 0.9562744

00:28:13.990 --> 00:28:15.285 twenty four, just for reference.

NOTE Confidence: 0.9838701

00:28:15.825 --> 00:28:16.545 And the people in the

NOTE Confidence: 0.9838701

00:28:16.545 --> 00:28:18.065 chatbot conversations are gonna have

NOTE Confidence: 0.9838701

00:28:18.065 --> 00:28:19.905 three topics randomly picked. This

NOTE Confidence: 0.9838701

00:28:19.905 --> 00:28:20.785 is just showing you one

NOTE Confidence: 0.9838701

00:28:20.785 --> 00:28:22.305 example subject where you're gonna

NOTE Confidence: 0.9838701

00:28:22.305 --> 00:28:23.425 talk for about that topic

NOTE Confidence: 0.9838701

00:28:23.425 --> 00:28:24.465 for about five minutes in

NOTE Confidence: 0.9838701

00:28:24.465 --> 00:28:25.265 a back and forth sort

NOTE Confidence: 0.9838701

00:28:25.265 --> 00:28:26.725 of AOL style exchange.

NOTE Confidence: 0.97906023

00:28:27.490 --> 00:28:29.650 Critically, after each conversation, people

NOTE Confidence: 0.97906023

00:28:29.650 --> 00:28:30.770 give us their happiness ratings.

NOTE Confidence: 0.97906023

00:28:30.770 --> 00:28:31.570 This is what we're gonna

NOTE Confidence: 0.97906023

00:28:31.570 --> 00:28:32.929 use to understand the impacts

NOTE Confidence: 0.97906023

00:28:32.929 --> 00:28:34.549 that it's having on, momentary

NOTE Confidence: 0.97906023

00:28:34.609 --> 00:28:35.109 happiness.

NOTE Confidence: 0.9562298

00:28:35.410 --> 00:28:36.289 This is a scale that

NOTE Confidence: 0.9562298

00:28:36.289 --> 00:28:37.090 we often use in the

NOTE Confidence: 0.9562298

00:28:37.090 --> 00:28:37.890 lab and we can do

NOTE Confidence: 0.9562298

00:28:37.890 --> 00:28:39.250 computational modeling on this. So

NOTE Confidence: 0.9562298

00:28:39.250 --> 00:28:40.414 it's it's very simple. You

NOTE Confidence: 0.9562298

00:28:40.414 --> 00:28:41.455 just rate how happy you

NOTE Confidence: 0.9562298

00:28:41.455 --> 00:28:42.414 are now on a zero

NOTE Confidence: 0.9562298

00:28:42.414 --> 00:28:43.695 to a hundred scale ranging

NOTE Confidence: 0.9562298

00:28:43.695 --> 00:28:44.815 from very unhappy to very

NOTE Confidence: 0.9562298

00:28:44.815 --> 00:28:45.315 happy.

NOTE Confidence: 0.97664386

00:28:46.095 --> 00:28:47.215 And although this isn't the

NOTE Confidence: 0.97664386

00:28:47.215 --> 00:28:48.414 same as depression, I should

NOTE Confidence: 0.97664386

00:28:48.414 --> 00:28:50.015 note that baseline happiness across

NOTE Confidence: 0.97664386

00:28:50.015 --> 00:28:50.975 a variety of our tasks

NOTE Confidence: 0.97664386

00:28:50.975 --> 00:28:52.654 is strongly predictive of PHQ

NOTE Confidence: 0.97664386

00:28:52.654 --> 00:28:53.395 nine score.

NOTE Confidence: 0.97050035

00:28:54.270 --> 00:28:55.710 For our comparison group, we

NOTE Confidence: 0.97050035

00:28:55.710 --> 00:28:57.470 chose to use journaling, in

NOTE Confidence: 0.97050035

00:28:57.470 --> 00:28:59.230 isolation about the topics. People

NOTE Confidence: 0.97050035

00:28:59.230 --> 00:29:00.350 don't like to journal as

NOTE Confidence: 0.97050035

00:29:00.350 --> 00:29:02.190 long, about these topics. They

NOTE Confidence: 0.97050035

00:29:02.190 --> 00:29:03.150 kind of fall off after

NOTE Confidence: 0.97050035

00:29:03.150 --> 00:29:04.110 about a minute. So we

NOTE Confidence: 0.97050035

00:29:04.110 --> 00:29:05.150 have people just do the

NOTE Confidence: 0.97050035

00:29:05.150 --> 00:29:06.750 entire topics in a randomized

NOTE Confidence: 0.97050035

00:29:06.750 --> 00:29:07.870 order for about one minute

NOTE Confidence: 0.97050035

00:29:07.870 --> 00:29:08.750 and again we get that

NOTE Confidence: 0.97050035

00:29:08.750 --> 00:29:09.855 happiness rating after

NOTE Confidence: 0.97739667

00:29:10.415 --> 00:29:11.775 each one. So journaling is

NOTE Confidence: 0.97739667

00:29:11.775 --> 00:29:13.294 thought to be, pretty important

NOTE Confidence: 0.97739667

00:29:13.294 --> 00:29:14.815 for things like homework compliance

NOTE Confidence: 0.97739667

00:29:14.815 --> 00:29:16.655 and, CBT therapies as well

NOTE Confidence: 0.97739667

00:29:16.655 --> 00:29:17.615 as it's a common,

NOTE Confidence: 0.98050535

00:29:18.015 --> 00:29:19.934 positive well-being intervention. So for

NOTE Confidence: 0.98050535

00:29:19.934 --> 00:29:21.535 example, having a gratitude journal

NOTE Confidence: 0.98050535

00:29:21.535 --> 00:29:22.255 is one of the more

NOTE Confidence: 0.98050535

00:29:22.255 --> 00:29:23.794 popular ones in positive psychology.

NOTE Confidence: 0.9914795

00:29:24.220 --> 00:29:24.940 So we thought this was

NOTE Confidence: 0.9914795

00:29:24.940 --> 00:29:26.060 a pretty good comparison just

NOTE Confidence: 0.9914795

00:29:26.060 --> 00:29:26.860 to see how well our

NOTE Confidence: 0.9914795

00:29:26.860 --> 00:29:28.720 chatbot conversations are holding up.

NOTE Confidence: 0.90425617

00:29:29.740 --> 00:29:31.180 So how do chatbots affect

NOTE Confidence: 0.90425617

00:29:31.180 --> 00:29:31.680 happiness?

NOTE Confidence: 0.96388626

00:29:32.060 --> 00:29:32.940 In this graph I hope

NOTE Confidence: 0.96388626

00:29:32.940 --> 00:29:34.460 you generated some expectations about

NOTE Confidence: 0.96388626

00:29:34.460 --> 00:29:35.580 where you thought the topics

NOTE Confidence: 0.96388626

00:29:35.580 --> 00:29:36.685 will be ordered, but I'm

NOTE Confidence: 0.96388626

00:29:36.685 --> 00:29:37.805 gonna be showing the average

NOTE Confidence: 0.96388626

00:29:37.805 --> 00:29:39.005 happiness for the two different

NOTE Confidence: 0.96388626

00:29:39.005 --> 00:29:40.445 studies on the x axis

NOTE Confidence: 0.96388626

00:29:40.445 --> 00:29:41.405 where you have zero very

NOTE Confidence: 0.96388626

00:29:41.405 --> 00:29:43.085 unhappy, hundred very happy, and

NOTE Confidence: 0.96388626

00:29:43.085 --> 00:29:43.965 the topics on the y

NOTE Confidence: 0.96388626

00:29:43.965 --> 00:29:45.725 axis. These are ordered by

NOTE Confidence: 0.96388626

00:29:45.725 --> 00:29:47.005 the average happiness from the

NOTE Confidence: 0.96388626

00:29:47.005 --> 00:29:48.625 journaling study. So unsurprisingly

NOTE Confidence: 0.9483732

00:29:48.925 --> 00:29:49.965 people on average are a

NOTE Confidence: 0.9483732

00:29:49.965 --> 00:29:51.280 little happier when they're journaling

NOTE Confidence: 0.9483732

00:29:51.280 --> 00:29:52.640 about gratitude or their perfect

NOTE Confidence: 0.9483732

00:29:52.640 --> 00:29:53.680 day or something they're proud

NOTE Confidence: 0.9483732

00:29:53.680 --> 00:29:55.520 about, and they're less happy

NOTE Confidence: 0.9483732

00:29:55.520 --> 00:29:56.800 when talking about things they're

NOTE Confidence: 0.9483732

00:29:56.800 --> 00:29:58.240 guilty for they feel guilty

NOTE Confidence: 0.9483732

00:29:58.240 --> 00:29:59.200 about or times they felt

NOTE Confidence: 0.9483732

00:29:59.200 --> 00:29:59.700 depressed.

NOTE Confidence: 0.96813965

00:30:00.160 --> 00:30:01.360 So the key part is

NOTE Confidence: 0.96813965

00:30:01.360 --> 00:30:02.740 what about the chatbot comparison?

NOTE Confidence: 0.9632177

00:30:03.424 --> 00:30:04.304 So when I put the

NOTE Confidence: 0.9632177

00:30:04.304 --> 00:30:05.184 this data up you can

NOTE Confidence: 0.9632177

00:30:05.184 --> 00:30:06.544 see two patterns emerge. So

NOTE Confidence: 0.9632177

00:30:06.544 --> 00:30:07.345 the first is that you

NOTE Confidence: 0.9632177

00:30:07.345 --> 00:30:08.225 do have a pretty big

NOTE Confidence: 0.9632177

00:30:08.225 --> 00:30:09.424 main effect, so on average

NOTE Confidence: 0.9632177

00:30:09.424 --> 00:30:10.785 people are just happier, maybe

NOTE Confidence: 0.9632177

00:30:10.785 --> 00:30:11.905 it's a more engaging task

NOTE Confidence: 0.9632177

00:30:11.905 --> 00:30:12.945 after all you're having this

NOTE Confidence: 0.9632177

00:30:12.945 --> 00:30:14.145 interesting back and forth with

NOTE Confidence: 0.9632177

00:30:14.145 --> 00:30:15.125 an AI agent.

NOTE Confidence: 0.9912033

00:30:15.950 --> 00:30:17.070 But the more important part

NOTE Confidence: 0.9912033

00:30:17.070 --> 00:30:17.790 is that there is a

NOTE Confidence: 0.9912033

00:30:17.790 --> 00:30:19.790 significant interaction here, which is

NOTE Confidence: 0.9912033

00:30:19.790 --> 00:30:21.070 to say that the group

NOTE Confidence: 0.9912033

00:30:21.070 --> 00:30:22.450 who did the chatbot conversations

NOTE Confidence: 0.9912033

00:30:22.590 --> 00:30:23.790 are less affected by the

NOTE Confidence: 0.9912033

00:30:23.790 --> 00:30:24.690 topic negativity.

NOTE Confidence: 0.985397

00:30:25.309 --> 00:30:26.350 Another way to plot this

NOTE Confidence: 0.985397

00:30:26.350 --> 00:30:27.470 a little more intuitively is

NOTE Confidence: 0.985397

00:30:27.470 --> 00:30:28.590 just to plot the difference

NOTE Confidence: 0.985397

00:30:28.590 --> 00:30:30.525 between the average chatbot happiness

NOTE Confidence: 0.985397

00:30:30.525 --> 00:30:31.725 and the journal happiness per

NOTE Confidence: 0.985397

00:30:31.725 --> 00:30:33.005 topic. And you can see

NOTE Confidence: 0.985397

00:30:33.005 --> 00:30:34.365 that the biggest chatbot happiness

NOTE Confidence: 0.985397

00:30:34.365 --> 00:30:35.325 boost on the order of

NOTE Confidence: 0.985397

00:30:35.325 --> 00:30:36.145 about a fifteen,

NOTE Confidence: 0.920166

00:30:36.685 --> 00:30:38.125 fifteen point swing on a

NOTE Confidence: 0.920166

00:30:38.125 --> 00:30:39.405 hundred point scale comes from

NOTE Confidence: 0.920166

00:30:39.405 --> 00:30:40.625 the most negative topics.

NOTE Confidence: 0.9612746

00:30:41.405 --> 00:30:42.525 So in short, we see

NOTE Confidence: 0.9612746

00:30:42.525 --> 00:30:44.205 that chatbots do increase momentary

NOTE Confidence: 0.9612746

00:30:44.205 --> 00:30:45.665 happiness compared with journaling,

NOTE Confidence: 0.9981166

00:30:46.210 --> 00:30:47.090 and we see the greatest

NOTE Confidence: 0.9981166

00:30:47.090 --> 00:30:48.850 benefits occur during discussions about

NOTE Confidence: 0.9981166

00:30:48.850 --> 00:30:50.150 negative topics in particular.

NOTE Confidence: 0.9846802

00:30:51.170 --> 00:30:52.130 So we've only been doing

NOTE Confidence: 0.9846802

00:30:52.130 --> 00:30:53.090 this sort of group level

NOTE Confidence: 0.9846802

00:30:53.090 --> 00:30:54.050 comparisons but we want to

NOTE Confidence: 0.9846802

00:30:54.050 --> 00:30:55.170 get some insight into what's

NOTE Confidence: 0.9846802

00:30:55.170 --> 00:30:56.210 going on in the chatbot

NOTE Confidence: 0.9846802

00:30:56.210 --> 00:30:57.750 conversations that might be resulting

NOTE Confidence: 0.9846802

00:30:57.890 --> 00:30:59.190 in this increase in momentary

NOTE Confidence: 0.9846802

00:30:59.250 --> 00:30:59.750 happiness.

NOTE Confidence: 0.9735938

00:31:00.175 --> 00:31:00.735 And so the way we're

NOTE Confidence: 0.9735938

00:31:00.735 --> 00:31:01.935 gonna do that is something

NOTE Confidence: 0.9735938

00:31:01.935 --> 00:31:02.735 very similar to what we

NOTE Confidence: 0.9735938

00:31:02.735 --> 00:31:03.695 did before. We're gonna use

NOTE Confidence: 0.9735938

00:31:03.695 --> 00:31:05.395 an AI assisted sentiment analysis.

NOTE Confidence: 0.9848599

00:31:05.775 --> 00:31:07.295 So this schematic is showing

NOTE Confidence: 0.9848599

00:31:07.295 --> 00:31:08.575 you each utterance is sort

NOTE Confidence: 0.9848599

00:31:08.575 --> 00:31:09.935 of like an AOL style,

NOTE Confidence: 0.9848599

00:31:10.175 --> 00:31:11.535 thing that you're entering before

NOTE Confidence: 0.9848599

00:31:11.535 --> 00:31:13.289 pressing enter. So we separate

NOTE Confidence: 0.9848599

00:31:13.289 --> 00:31:14.409 out the utterances for both

NOTE Confidence: 0.9848599

00:31:14.409 --> 00:31:15.549 the user and the chatbot.

NOTE Confidence: 0.9848599

00:31:15.769 --> 00:31:16.730 We feed them into a

NOTE Confidence: 0.9848599

00:31:16.730 --> 00:31:18.169 separate large language model with

NOTE Confidence: 0.9848599

00:31:18.169 --> 00:31:19.149 some simple instructions

NOTE Confidence: 0.9547152

00:31:19.450 --> 00:31:20.889 for giving an integer sentiment

NOTE Confidence: 0.9547152

00:31:20.889 --> 00:31:22.250 rating and the output of

NOTE Confidence: 0.9547152

00:31:22.250 --> 00:31:23.130 that is just a single

NOTE Confidence: 0.9547152

00:31:23.130 --> 00:31:24.350 number for what the utterances

NOTE Confidence: 0.9547152

00:31:24.409 --> 00:31:25.289 on a zero to ten

NOTE Confidence: 0.9547152

00:31:25.289 --> 00:31:25.929 scale. So this is the

NOTE Confidence: 0.9547152

00:31:25.929 --> 00:31:26.970 way we're gonna automate our

NOTE Confidence: 0.9547152

00:31:26.970 --> 00:31:27.870 sentiment analysis.

NOTE Confidence: 0.8078613

00:31:30.705 --> 00:31:31.205 Unfortunately,

NOTE Confidence: 0.8983887

00:31:31.825 --> 00:31:32.865 I should have been disappeared,

NOTE Confidence: 0.8983887

00:31:32.865 --> 00:31:33.985 but to explain the x

NOTE Confidence: 0.8983887

00:31:33.985 --> 00:31:36.145 axis, the utterance pairs represent,

NOTE Confidence: 0.9679706

00:31:36.465 --> 00:31:37.665 each utterance that the user

NOTE Confidence: 0.9679706

00:31:37.665 --> 00:31:38.785 in the chatbot took in

NOTE Confidence: 0.9679706

00:31:38.785 --> 00:31:40.225 order going from one all

NOTE Confidence: 0.9679706

00:31:40.225 --> 00:31:41.425 the way to six. Ninety

NOTE Confidence: 0.9679706

00:31:41.425 --> 00:31:42.945 five percent of conversations ended

NOTE Confidence: 0.9679706

00:31:42.945 --> 00:31:43.320 after

NOTE Confidence: 0.96763074

00:31:45.320 --> 00:31:45.367 about six, utterances, so it's

NOTE Confidence: 0.96763074

00:31:45.367 --> 00:31:45.559 sort of showing you the

NOTE Confidence: 0.96763074

00:31:45.559 --> 00:31:47.159 full range. And the sentiment

NOTE Confidence: 0.96763074

00:31:47.159 --> 00:31:48.279 as rated by an external

NOTE Confidence: 0.96763074

00:31:48.279 --> 00:31:49.159 LM is shown on the

NOTE Confidence: 0.96763074

00:31:49.159 --> 00:31:50.360 y axis. And the critical

NOTE Confidence: 0.96763074

00:31:50.360 --> 00:31:51.639 part here is you can

NOTE Confidence: 0.96763074

00:31:51.639 --> 00:31:53.580 see, the sentiment is increasing

NOTE Confidence: 0.96763074

00:31:53.639 --> 00:31:55.000 on average throughout the entire

NOTE Confidence: 0.96763074

00:31:55.000 --> 00:31:56.595 corpus. So the user is

NOTE Confidence: 0.96763074

00:31:56.595 --> 00:31:58.035 starting around let's say five

NOTE Confidence: 0.96763074

00:31:58.035 --> 00:31:59.315 point five but they're ending

NOTE Confidence: 0.96763074

00:31:59.315 --> 00:32:00.355 at about a little under

NOTE Confidence: 0.96763074

00:32:00.355 --> 00:32:01.555 seven. So we think this

NOTE Confidence: 0.96763074

00:32:01.555 --> 00:32:02.835 chat this sentiment boost is

NOTE Confidence: 0.96763074

00:32:02.835 --> 00:32:03.955 actually a key part to

NOTE Confidence: 0.96763074

00:32:03.955 --> 00:32:05.635 why individuals in the chatbot

NOTE Confidence: 0.96763074

00:32:05.635 --> 00:32:06.755 condition are ending up a

NOTE Confidence: 0.96763074

00:32:06.755 --> 00:32:07.875 little happier than those in

NOTE Confidence: 0.96763074

00:32:07.875 --> 00:32:08.455 the journaling.

NOTE Confidence: 0.9784443

00:32:10.390 --> 00:32:11.190 Just to show you this

NOTE Confidence: 0.9784443

00:32:11.190 --> 00:32:12.230 broken out by topic in

NOTE Confidence: 0.9784443

00:32:12.230 --> 00:32:13.830 case you're interested, so the

NOTE Confidence: 0.9784443

00:32:13.830 --> 00:32:15.190 dynamics are for the average

NOTE Confidence: 0.9784443

00:32:15.190 --> 00:32:16.470 across all the topics, but

NOTE Confidence: 0.9784443

00:32:16.470 --> 00:32:17.190 you can see for some

NOTE Confidence: 0.9784443

00:32:17.190 --> 00:32:18.390 of the positive topics, it's

NOTE Confidence: 0.9784443

00:32:18.390 --> 00:32:19.669 really hard to maintain a

NOTE Confidence: 0.9784443

00:32:19.669 --> 00:32:20.870 ten out of ten sentiment

NOTE Confidence: 0.9784443

00:32:20.870 --> 00:32:22.070 the entire time. So there's

NOTE Confidence: 0.9784443

00:32:22.070 --> 00:32:22.790 a little bit of a

NOTE Confidence: 0.9784443

00:32:22.790 --> 00:32:23.775 dip for the user when

NOTE Confidence: 0.9784443

00:32:23.775 --> 00:32:24.895 it comes to their last,

NOTE Confidence: 0.9812852

00:32:25.295 --> 00:32:26.815 last sentiment utterance versus their

NOTE Confidence: 0.9812852

00:32:26.815 --> 00:32:28.175 first. But again, you can

NOTE Confidence: 0.9812852

00:32:28.175 --> 00:32:29.295 see the biggest impacts are

NOTE Confidence: 0.9812852

00:32:29.295 --> 00:32:30.595 for those most negative topics.

NOTE Confidence: 0.9812852

00:32:30.655 --> 00:32:31.375 So you get a really

NOTE Confidence: 0.9812852

00:32:31.375 --> 00:32:32.655 large difference in the sentiment,

NOTE Confidence: 0.9812852

00:32:32.655 --> 00:32:34.415 for example, discussing depression, and

NOTE Confidence: 0.9812852

00:32:34.415 --> 00:32:35.375 we think this is key

NOTE Confidence: 0.9812852

00:32:35.375 --> 00:32:36.255 for why you get the

NOTE Confidence: 0.9812852

00:32:36.255 --> 00:32:37.615 happiness boost, but I'm happy

NOTE Confidence: 0.9812852

00:32:37.615 --> 00:32:38.575 to take more questions about

NOTE Confidence: 0.9812852

00:32:38.575 --> 00:32:40.230 it. So just to summarize

NOTE Confidence: 0.9812852

00:32:40.230 --> 00:32:40.730 this,

NOTE Confidence: 0.9783133

00:32:41.110 --> 00:32:42.150 we show some evidence that

NOTE Confidence: 0.9783133

00:32:42.150 --> 00:32:43.510 the emotional tone becomes more

NOTE Confidence: 0.9783133

00:32:43.510 --> 00:32:45.270 positive across the conversation. We

NOTE Confidence: 0.9783133

00:32:45.270 --> 00:32:46.310 also have evidence that we

NOTE Confidence: 0.9783133

00:32:46.310 --> 00:32:47.430 think for mirroring where the

NOTE Confidence: 0.9783133

00:32:47.430 --> 00:32:48.630 user and the chatbot are

NOTE Confidence: 0.9783133

00:32:48.630 --> 00:32:50.090 both mirroring the other person.

NOTE Confidence: 0.96641034

00:32:50.710 --> 00:32:51.590 And again you see the

NOTE Confidence: 0.96641034

00:32:51.590 --> 00:32:53.110 strongest improvements in sentiment were

NOTE Confidence: 0.96641034

00:32:53.110 --> 00:32:54.525 discussions for the negative topics,

NOTE Confidence: 0.96641034

00:32:54.525 --> 00:32:55.245 which we think is key

NOTE Confidence: 0.96641034

00:32:55.245 --> 00:32:56.545 for the happiness boost.

NOTE Confidence: 0.9564209

00:32:57.565 --> 00:32:58.625 So just to summarize,

NOTE Confidence: 0.97941303

00:32:59.005 --> 00:33:00.045 and wrap up, I just

NOTE Confidence: 0.97941303

00:33:00.045 --> 00:33:00.605 want to leave you with

NOTE Confidence: 0.97941303

00:33:00.605 --> 00:33:01.805 this idea that language is

NOTE Confidence: 0.97941303

00:33:01.805 --> 00:33:03.165 a really powerful window into

NOTE Confidence: 0.97941303

00:33:03.165 --> 00:33:04.445 our mental states. And I

NOTE Confidence: 0.97941303

00:33:04.445 --> 00:33:05.965 hope I've shown how AI,

NOTE Confidence: 0.97941303

00:33:05.965 --> 00:33:07.805 specifically tools like sentiment analysis,

NOTE Confidence: 0.97941303

00:33:07.805 --> 00:33:09.025 can make sense of language's

NOTE Confidence: 0.97941303

00:33:09.085 --> 00:33:10.750 relationship to mental health. If

NOTE Confidence: 0.97941303

00:33:10.750 --> 00:33:11.950 you're interested in exploring this

NOTE Confidence: 0.97941303

00:33:11.950 --> 00:33:13.390 further, I will be leading

NOTE Confidence: 0.97941303

00:33:13.390 --> 00:33:15.070 a one hour workshop using

NOTE Confidence: 0.97941303

00:33:15.070 --> 00:33:16.750 open source models for sensitive

NOTE Confidence: 0.97941303

00:33:16.750 --> 00:33:17.789 clinical data that will be

NOTE Confidence: 0.97941303

00:33:17.789 --> 00:33:19.330 held at the computational psychiatry

NOTE Confidence: 0.97941303

00:33:19.390 --> 00:33:20.669 conference here at Yale, which

NOTE Confidence: 0.97941303

00:33:20.669 --> 00:33:21.710 is going on from July

NOTE Confidence: 0.97941303

00:33:21.710 --> 00:33:23.150 fourteenth to sixteenth. So look

NOTE Confidence: 0.97941303

00:33:23.150 --> 00:33:23.925 online for that.

NOTE Confidence: 0.96698815

00:33:24.565 --> 00:33:26.165 And finally, I also hope

NOTE Confidence: 0.96698815

00:33:26.165 --> 00:33:27.325 that this talk complements some

NOTE Confidence: 0.96698815

00:33:27.325 --> 00:33:28.885 of the ongoing discussions about

NOTE Confidence: 0.96698815

00:33:28.885 --> 00:33:30.245 the potential impacts both the

NOTE Confidence: 0.96698815

00:33:30.245 --> 00:33:31.605 benefits and the risks of

NOTE Confidence: 0.96698815

00:33:31.605 --> 00:33:33.125 human AI interaction. I think

NOTE Confidence: 0.96698815

00:33:33.125 --> 00:33:34.325 this is especially critical for

NOTE Confidence: 0.96698815

00:33:34.325 --> 00:33:36.405 vulnerable populations like adolescents where

NOTE Confidence: 0.96698815

00:33:36.405 --> 00:33:37.685 AI use is growing rapidly

NOTE Confidence: 0.96698815

00:33:37.685 --> 00:33:38.340 so So we need more

NOTE Confidence: 0.96698815

00:33:38.340 --> 00:33:39.700 research to understand both the

NOTE Confidence: 0.96698815

00:33:39.700 --> 00:33:41.000 short and long term impacts.

NOTE Confidence: 0.952918

00:33:41.940 --> 00:33:42.820 So I'd just like to

NOTE Confidence: 0.952918

00:33:42.820 --> 00:33:44.020 acknowledge the Rutledge lab and

NOTE Confidence: 0.952918

00:33:44.020 --> 00:33:45.059 my advisor Rob Rutledge who

NOTE Confidence: 0.952918

00:33:45.059 --> 00:33:45.860 let me start this line

NOTE Confidence: 0.952918

00:33:45.860 --> 00:33:46.980 of research as well as

NOTE Confidence: 0.952918

00:33:46.980 --> 00:33:47.940 thanks to both Michaels and

NOTE Confidence: 0.952918

00:33:47.940 --> 00:33:49.140 the child studies center for

NOTE Confidence: 0.952918

00:33:49.140 --> 00:33:50.179 t thirty two for supporting

NOTE Confidence: 0.952918

00:33:50.179 --> 00:33:51.475 this. And I want to

NOTE Confidence: 0.952918

00:33:51.475 --> 00:33:52.595 end by announcing I will

NOTE Confidence: 0.952918

00:33:52.595 --> 00:33:53.635 be starting as an assistant

NOTE Confidence: 0.952918

00:33:53.635 --> 00:33:55.235 professor in psychology department at

NOTE Confidence: 0.952918

00:33:55.235 --> 00:33:56.115 Stanford in the fall of

NOTE Confidence: 0.952918

00:33:56.115 --> 00:33:57.315 twenty twenty seven. So if

NOTE Confidence: 0.952918

00:33:57.315 --> 00:33:58.355 you know anyone who's interested

NOTE Confidence: 0.952918

00:33:58.355 --> 00:33:59.315 in this kind of work,

NOTE Confidence: 0.952918

00:33:59.315 --> 00:34:00.355 have them look out for

NOTE Confidence: 0.952918

00:34:00.355 --> 00:34:01.875 hiring announcements for lab manager,

NOTE Confidence: 0.952918

00:34:01.875 --> 00:34:03.554 graduate student, and postdoc. Thank

NOTE Confidence: 0.952918

00:34:03.554 --> 00:34:04.595 you all for your attention,

NOTE Confidence: 0.952918

00:34:04.755 --> 00:34:05.655 and this opportunity.

NOTE Confidence: 0.9272868

00:34:13.450 --> 00:34:14.750 Questions for doctor Apner?

NOTE Confidence: 0.9921875

00:34:21.135 --> 00:34:22.915 Wonderful talk. Really impressive.

NOTE Confidence: 0.8873291

00:34:23.614 --> 00:34:24.275 I'm wondering,

NOTE Confidence: 0.9306946

00:34:26.094 --> 00:34:28.094 you used the, sentiment analysis,

NOTE Confidence: 0.9306946

00:34:28.094 --> 00:34:29.375 and it it's it seems

NOTE Confidence: 0.9306946

00:34:29.375 --> 00:34:30.094 to be like a pep

NOTE Confidence: 0.9306946

00:34:30.094 --> 00:34:30.594 talk.

NOTE Confidence: 0.99519855

00:34:30.975 --> 00:34:31.875 And I'm wondering,

NOTE Confidence: 0.99881417

00:34:32.415 --> 00:34:33.775 your thoughts about using this

NOTE Confidence: 0.99881417

00:34:33.775 --> 00:34:34.415 for other,

NOTE Confidence: 0.94424975

00:34:34.735 --> 00:34:36.090 walks of life. You know?

NOTE Confidence: 0.94424975

00:34:36.410 --> 00:34:38.090 Just imagine my my kid

NOTE Confidence: 0.94424975

00:34:38.090 --> 00:34:39.770 struggling with sports and and,

NOTE Confidence: 0.94424975

00:34:39.770 --> 00:34:40.430 you know,

NOTE Confidence: 0.97379357

00:34:40.810 --> 00:34:41.770 having a tough time on

NOTE Confidence: 0.97379357

00:34:41.770 --> 00:34:43.550 the field. And, you know,

NOTE Confidence: 0.97379357

00:34:43.770 --> 00:34:44.489 do you think that this

NOTE Confidence: 0.97379357

00:34:44.489 --> 00:34:45.530 type of approach could be

NOTE Confidence: 0.97379357

00:34:45.610 --> 00:34:46.830 or or could guide parents,

NOTE Confidence: 0.97379357

00:34:46.890 --> 00:34:48.170 for instance, to coach them

NOTE Confidence: 0.97379357

00:34:48.170 --> 00:34:49.770 on, how to improve their

NOTE Confidence: 0.97379357

00:34:49.770 --> 00:34:51.050 sentiment, that type of thing?

NOTE Confidence: 0.97379357

00:34:51.050 --> 00:34:51.550 Thanks.

NOTE Confidence: 0.6305339

00:34:53.805 --> 00:34:54.305 Ashid.

NOTE Confidence: 0.9955706

00:34:54.765 --> 00:34:55.885 Thanks for the question. Yeah.

NOTE Confidence: 0.9955706

00:34:55.885 --> 00:34:56.445 I think,

NOTE Confidence: 0.99960935

00:34:56.844 --> 00:34:58.625 as far as implications for

NOTE Confidence: 0.9837891

00:34:59.405 --> 00:35:00.765 that kind of work, I

NOTE Confidence: 0.9837891

00:35:00.765 --> 00:35:01.805 think what I what I

NOTE Confidence: 0.9837891

00:35:01.805 --> 00:35:02.685 think about is I think

NOTE Confidence: 0.9837891

00:35:02.685 --> 00:35:04.205 chatbots have a certain way

NOTE Confidence: 0.9837891

00:35:04.205 --> 00:35:05.985 of increasing our momentary happiness,

NOTE Confidence: 0.9837891

00:35:06.219 --> 00:35:07.180 and part of that is

NOTE Confidence: 0.9837891

00:35:07.180 --> 00:35:08.540 through increasing in our sentiment.

NOTE Confidence: 0.9705944

00:35:09.180 --> 00:35:10.219 I didn't discuss this, but

NOTE Confidence: 0.9705944

00:35:10.219 --> 00:35:11.340 I also think it's driving

NOTE Confidence: 0.9705944

00:35:11.340 --> 00:35:12.620 people towards a solution. So,

NOTE Confidence: 0.9705944

00:35:12.620 --> 00:35:13.739 like, figuring out a solution

NOTE Confidence: 0.9705944

00:35:13.739 --> 00:35:14.540 to the problem that you're

NOTE Confidence: 0.9705944

00:35:14.540 --> 00:35:15.660 talking about, and I think

NOTE Confidence: 0.9705944

00:35:15.660 --> 00:35:16.460 that's part of the way

NOTE Confidence: 0.9705944

00:35:16.460 --> 00:35:17.980 chatbots have been reinforced. So

NOTE Confidence: 0.9705944

00:35:17.980 --> 00:35:19.020 I think it's one path

NOTE Confidence: 0.9705944

00:35:19.020 --> 00:35:20.220 to making someone happier, but

NOTE Confidence: 0.9705944

00:35:20.220 --> 00:35:21.100 I think there's also lots

NOTE Confidence: 0.9705944

00:35:21.100 --> 00:35:21.480 of other paths that clinicians

NOTE Confidence: 0.9705944

00:35:21.480 --> 00:35:22.355 in their own clinicians in

NOTE Confidence: 0.9705944

00:35:22.355 --> 00:35:23.234 their own can probably think

NOTE Confidence: 0.9705944

00:35:23.234 --> 00:35:24.114 about in terms of making

NOTE Confidence: 0.9705944

00:35:24.114 --> 00:35:25.234 people happier. So one of

NOTE Confidence: 0.9705944

00:35:25.234 --> 00:35:26.035 the goals that we're trying

NOTE Confidence: 0.9705944

00:35:26.035 --> 00:35:27.255 to do is to compare

NOTE Confidence: 0.9705944

00:35:27.395 --> 00:35:29.075 human AI conversations in the

NOTE Confidence: 0.9705944

00:35:29.075 --> 00:35:30.275 same topic list to human

NOTE Confidence: 0.9705944

00:35:30.275 --> 00:35:31.234 to human. And I think

NOTE Confidence: 0.9705944

00:35:31.234 --> 00:35:31.954 one of the key things

NOTE Confidence: 0.9705944

00:35:31.954 --> 00:35:32.914 that people can do that

NOTE Confidence: 0.9705944

00:35:32.914 --> 00:35:34.594 chatbots are explicitly designed not

NOTE Confidence: 0.9705944

00:35:34.594 --> 00:35:35.714 to, although in theory, they

NOTE Confidence: 0.9705944

00:35:35.714 --> 00:35:37.070 could, is, reciprocate.

NOTE Confidence: 0.9725228

00:35:37.370 --> 00:35:38.010 So I can tell you

NOTE Confidence: 0.9725228

00:35:38.010 --> 00:35:38.969 about a time I you

NOTE Confidence: 0.9725228

00:35:38.969 --> 00:35:40.090 know, someone hurt my feelings

NOTE Confidence: 0.9725228

00:35:40.090 --> 00:35:41.469 and that sort of reciprocal

NOTE Confidence: 0.9725228

00:35:41.610 --> 00:35:43.050 bonding, even though it's of

NOTE Confidence: 0.9725228

00:35:43.050 --> 00:35:44.330 a low sentiment, might actually

NOTE Confidence: 0.9725228

00:35:44.330 --> 00:35:45.530 result in some boosts both

NOTE Confidence: 0.9725228

00:35:45.530 --> 00:35:46.410 in the short term and

NOTE Confidence: 0.9725228

00:35:46.410 --> 00:35:47.530 long term. It's just not

NOTE Confidence: 0.9725228

00:35:47.530 --> 00:35:48.570 something we'll see in the

NOTE Confidence: 0.9725228

00:35:48.570 --> 00:35:50.195 default chatbot models, but it

NOTE Confidence: 0.9725228

00:35:50.195 --> 00:35:51.235 is a potential. So I

NOTE Confidence: 0.9725228

00:35:51.235 --> 00:35:51.875 guess the way I would

NOTE Confidence: 0.9725228

00:35:51.875 --> 00:35:53.075 think about it is there's

NOTE Confidence: 0.9725228

00:35:53.075 --> 00:35:54.355 methods the chatbots might be

NOTE Confidence: 0.9725228

00:35:54.355 --> 00:35:55.875 using that differ or complement

NOTE Confidence: 0.9725228

00:35:55.875 --> 00:35:56.755 the way humans are doing

NOTE Confidence: 0.9725228

00:35:56.755 --> 00:35:57.235 it.

NOTE Confidence: 0.9706082

00:35:57.635 --> 00:35:58.195 So I don't know if

NOTE Confidence: 0.9706082

00:35:58.195 --> 00:35:59.315 that answers, but that's what

NOTE Confidence: 0.9706082

00:35:59.315 --> 00:36:00.114 I think about it. Thanks

NOTE Confidence: 0.9706082

00:36:00.114 --> 00:36:00.935 for the question.

NOTE Confidence: 0.97711587

00:36:21.505 --> 00:36:22.225 This is gonna be a

NOTE Confidence: 0.97711587

00:36:22.225 --> 00:36:23.345 little different. I'm talking a

NOTE Confidence: 0.97711587

00:36:23.345 --> 00:36:24.885 lot about what I'm building,

NOTE Confidence: 0.9750744

00:36:25.825 --> 00:36:26.864 and I feel like a

NOTE Confidence: 0.9750744

00:36:26.864 --> 00:36:27.905 little bit of an imposter

NOTE Confidence: 0.9750744

00:36:27.905 --> 00:36:29.105 standing up here after Lacey

NOTE Confidence: 0.9750744

00:36:29.105 --> 00:36:31.125 and Joey presented really impressive

NOTE Confidence: 0.9750744

00:36:31.185 --> 00:36:31.685 work.

NOTE Confidence: 0.9086745

00:36:32.100 --> 00:36:32.980 For those who don't know

NOTE Confidence: 0.9086745

00:36:32.980 --> 00:36:34.100 me, I'm Max Rolison. I'm

NOTE Confidence: 0.9086745

00:36:34.100 --> 00:36:34.900 a chief fellow in the

NOTE Confidence: 0.9086745

00:36:34.900 --> 00:36:36.440 Sonnet Integrated program.

NOTE Confidence: 0.99257815

00:36:37.540 --> 00:36:39.560 I've been lucky this year,

NOTE Confidence: 0.9560547

00:36:39.860 --> 00:36:40.920 as part of the flexibility

NOTE Confidence: 0.9560547

00:36:40.980 --> 00:36:42.020 of the program to be

NOTE Confidence: 0.9560547

00:36:42.020 --> 00:36:43.540 able to do kind of

NOTE Confidence: 0.9560547

00:36:43.540 --> 00:36:45.724 really specific training in neurodevelopmental

NOTE Confidence: 0.997345

00:36:46.105 --> 00:36:47.625 disabilities. And after this year,

NOTE Confidence: 0.997345

00:36:47.625 --> 00:36:49.085 I'll be joining the faculty

NOTE Confidence: 0.997345

00:36:49.145 --> 00:36:50.904 at Boston Children's Hospital this

NOTE Confidence: 0.997345

00:36:50.904 --> 00:36:51.404 summer.

NOTE Confidence: 0.9751362

00:36:53.545 --> 00:36:55.065 Today, I wanna talk to

NOTE Confidence: 0.9751362

00:36:55.065 --> 00:36:55.944 you about a problem that

NOTE Confidence: 0.9751362

00:36:55.944 --> 00:36:57.145 sits at the intersection of

NOTE Confidence: 0.9751362

00:36:57.145 --> 00:36:58.525 clinical care and research

NOTE Confidence: 0.93720245

00:36:59.369 --> 00:37:00.650 infrastructure for the patients. I'm

NOTE Confidence: 0.93720245

00:37:00.650 --> 00:37:02.269 gonna describe people with autism,

NOTE Confidence: 0.93720245

00:37:02.329 --> 00:37:04.650 intellectual disability, and related genetic

NOTE Confidence: 0.93720245

00:37:04.650 --> 00:37:05.150 conditions,

NOTE Confidence: 0.9855957

00:37:05.690 --> 00:37:07.549 where we're really missing fundamental

NOTE Confidence: 0.9855957

00:37:07.690 --> 00:37:08.969 data that the rest of

NOTE Confidence: 0.9855957

00:37:08.969 --> 00:37:10.650 medicine takes for granted. And

NOTE Confidence: 0.9855957

00:37:10.650 --> 00:37:12.089 the talk is gonna be

NOTE Confidence: 0.9855957

00:37:12.089 --> 00:37:13.289 about why this gap exists,

NOTE Confidence: 0.9855957

00:37:13.289 --> 00:37:14.589 what it costs us clinically,

NOTE Confidence: 0.9998047

00:37:15.245 --> 00:37:16.785 and what a concrete solution

NOTE Confidence: 0.93310547

00:37:17.405 --> 00:37:18.525 looks like and kinda what

NOTE Confidence: 0.93310547

00:37:18.525 --> 00:37:19.185 I'm building.

NOTE Confidence: 0.9980469

00:37:19.725 --> 00:37:20.225 So

NOTE Confidence: 0.99609375

00:37:21.085 --> 00:37:21.825 I wanna

NOTE Confidence: 0.9774475

00:37:22.125 --> 00:37:24.445 start with acknowledging all of

NOTE Confidence: 0.9774475

00:37:24.445 --> 00:37:25.485 the people that have gotten

NOTE Confidence: 0.9774475

00:37:25.485 --> 00:37:26.445 me to this point. I

NOTE Confidence: 0.9774475

00:37:26.445 --> 00:37:28.360 have spent the past fifteen

NOTE Confidence: 0.9774475

00:37:28.360 --> 00:37:29.800 years at Yale, in the

NOTE Confidence: 0.9774475

00:37:29.800 --> 00:37:31.000 child study center. I came

NOTE Confidence: 0.9774475

00:37:31.000 --> 00:37:31.739 at seventeen

NOTE Confidence: 0.9711363

00:37:32.280 --> 00:37:33.960 after my junior year in

NOTE Confidence: 0.9711363

00:37:33.960 --> 00:37:35.239 high school. So it's a

NOTE Confidence: 0.9711363

00:37:35.239 --> 00:37:37.400 very bittersweet transition right now

NOTE Confidence: 0.9711363

00:37:37.400 --> 00:37:38.200 as I feel like, I

NOTE Confidence: 0.9711363

00:37:38.200 --> 00:37:39.340 don't know, like, I'm graduating

NOTE Confidence: 0.9711363

00:37:39.400 --> 00:37:40.440 high school and growing up

NOTE Confidence: 0.9711363

00:37:40.440 --> 00:37:40.940 finally.

NOTE Confidence: 0.9851074

00:37:42.040 --> 00:37:42.540 But,

NOTE Confidence: 0.95182616

00:37:43.055 --> 00:37:43.855 you know, there's so many

NOTE Confidence: 0.95182616

00:37:43.855 --> 00:37:44.655 people in the room in

NOTE Confidence: 0.95182616

00:37:44.655 --> 00:37:45.614 the child study center who

NOTE Confidence: 0.95182616

00:37:45.614 --> 00:37:47.375 have intellectually shaped this work

NOTE Confidence: 0.95182616

00:37:47.375 --> 00:37:48.515 and how I got here,

NOTE Confidence: 0.99121094

00:37:49.695 --> 00:37:50.995 who are pictured here,

NOTE Confidence: 0.9381893

00:37:52.415 --> 00:37:53.295 as well as kind of

NOTE Confidence: 0.9381893

00:37:53.295 --> 00:37:55.455 funding opportunities through the Solnit

NOTE Confidence: 0.9381893

00:37:55.455 --> 00:37:56.815 program, the r twenty five,

NOTE Confidence: 0.9381893

00:37:56.815 --> 00:37:57.775 the t thirty two, and

NOTE Confidence: 0.9381893

00:37:57.775 --> 00:37:59.219 a child studies center pilot

NOTE Confidence: 0.9381893

00:37:59.219 --> 00:38:01.000 award, as well as mentors

NOTE Confidence: 0.9381893

00:38:01.060 --> 00:38:02.520 at Boston Children's Hospital.

NOTE Confidence: 0.9980469

00:38:04.500 --> 00:38:05.700 So in terms of learning

NOTE Confidence: 0.9980469

00:38:05.700 --> 00:38:07.000 objectives for the talk,

NOTE Confidence: 0.9962158

00:38:08.100 --> 00:38:09.320 I'm gonna talk about

NOTE Confidence: 0.9845703

00:38:09.940 --> 00:38:12.840 structural barriers, including fragmented measurement,

NOTE Confidence: 0.98695207

00:38:13.485 --> 00:38:15.165 systematic research exclusion, and poor

NOTE Confidence: 0.98695207

00:38:15.165 --> 00:38:15.665 generalizability

NOTE Confidence: 0.9954427

00:38:16.125 --> 00:38:17.665 that limit our

NOTE Confidence: 0.9549805

00:38:17.965 --> 00:38:19.505 evidence base in this population.

NOTE Confidence: 0.9707194

00:38:20.445 --> 00:38:21.725 We're gonna talk about measurement

NOTE Confidence: 0.9707194

00:38:21.725 --> 00:38:22.925 based care embedded in the,

NOTE Confidence: 0.9707194

00:38:22.925 --> 00:38:24.365 like, the electronic health record

NOTE Confidence: 0.9707194

00:38:24.365 --> 00:38:25.565 and how it functions not

NOTE Confidence: 0.9707194

00:38:25.565 --> 00:38:26.945 just as a clinical tool,

NOTE Confidence: 0.9707194

00:38:27.005 --> 00:38:28.385 but as a research infrastructure.

NOTE Confidence: 0.98167473

00:38:29.270 --> 00:38:30.469 And then I'm gonna highlight

NOTE Confidence: 0.98167473

00:38:30.469 --> 00:38:31.989 and talk about catatonia in

NOTE Confidence: 0.98167473

00:38:31.989 --> 00:38:32.489 neurodevelopmental

NOTE Confidence: 0.9951172

00:38:32.869 --> 00:38:33.369 disabilities

NOTE Confidence: 0.9913466

00:38:33.910 --> 00:38:35.349 as a model syndrome that

NOTE Confidence: 0.9913466

00:38:35.349 --> 00:38:37.109 illustrates precisely kind of what

NOTE Confidence: 0.9913466

00:38:37.109 --> 00:38:38.310 happens when we're missing this

NOTE Confidence: 0.9913466

00:38:38.310 --> 00:38:39.849 longitudinal baseline data.

NOTE Confidence: 0.9842122

00:38:40.630 --> 00:38:42.005 So to start with the

NOTE Confidence: 0.9842122

00:38:42.005 --> 00:38:43.445 problem, I wanna define the

NOTE Confidence: 0.9842122

00:38:43.445 --> 00:38:45.065 population that we're talking about,

NOTE Confidence: 0.9536133

00:38:46.005 --> 00:38:46.825 because it's

NOTE Confidence: 0.9905525

00:38:47.285 --> 00:38:49.285 matters for everything that kind

NOTE Confidence: 0.9905525

00:38:49.285 --> 00:38:50.505 of is going to follow.

NOTE Confidence: 0.9905525

00:38:50.645 --> 00:38:51.364 A lot of this could

NOTE Confidence: 0.9905525

00:38:51.364 --> 00:38:52.645 be true about pediatric mental

NOTE Confidence: 0.9905525

00:38:52.645 --> 00:38:53.844 health in general, but this

NOTE Confidence: 0.9905525

00:38:53.844 --> 00:38:55.205 is the population I'm really

NOTE Confidence: 0.9905525

00:38:55.205 --> 00:38:56.025 kind of highlighting.

NOTE Confidence: 0.9998047

00:38:56.370 --> 00:38:57.350 So we have three overlapping

NOTE Confidence: 0.98588055

00:38:57.810 --> 00:38:59.410 groups. We have autism spectrum

NOTE Confidence: 0.98588055

00:38:59.410 --> 00:38:59.910 disorder,

NOTE Confidence: 0.9760417

00:39:01.490 --> 00:39:02.770 where about a third to

NOTE Confidence: 0.9760417

00:39:02.770 --> 00:39:04.370 half of individuals with co

NOTE Confidence: 0.9760417

00:39:04.530 --> 00:39:06.310 have co occurring intellectual disability.

NOTE Confidence: 0.9539659

00:39:07.730 --> 00:39:08.864 And that's not generally the

NOTE Confidence: 0.9539659

00:39:08.864 --> 00:39:10.305 picture from research samples, but

NOTE Confidence: 0.9539659

00:39:10.305 --> 00:39:11.665 it's the reality of clinically

NOTE Confidence: 0.9539659

00:39:11.665 --> 00:39:12.705 when we're seeing these patients

NOTE Confidence: 0.9539659

00:39:12.705 --> 00:39:13.745 who's showing up to see

NOTE Confidence: 0.9539659

00:39:13.745 --> 00:39:14.405 a psychiatrist.

NOTE Confidence: 0.977971

00:39:15.344 --> 00:39:16.545 We have patients with intellectual

NOTE Confidence: 0.977971

00:39:16.545 --> 00:39:18.864 and developmental disability broadly, where

NOTE Confidence: 0.977971

00:39:18.864 --> 00:39:20.945 psychiatric comorbidity is very high,

NOTE Confidence: 0.977971

00:39:20.945 --> 00:39:22.560 and patients often can't self

NOTE Confidence: 0.977971

00:39:22.560 --> 00:39:24.000 report their symptoms in the

NOTE Confidence: 0.977971

00:39:24.000 --> 00:39:24.500 ways

NOTE Confidence: 0.8897298

00:39:25.120 --> 00:39:26.980 the stand our standardized assessments

NOTE Confidence: 0.8897298

00:39:27.120 --> 00:39:27.200 assume.

NOTE Confidence: 0.99274904

00:39:29.040 --> 00:39:29.920 I think we need to

NOTE Confidence: 0.99274904

00:39:29.920 --> 00:39:31.120 kind of reframe how we

NOTE Confidence: 0.99274904

00:39:31.120 --> 00:39:32.480 think about this population rather

NOTE Confidence: 0.99274904

00:39:32.480 --> 00:39:34.180 than thinking about psychiatric comorbidity

NOTE Confidence: 0.99274904

00:39:34.400 --> 00:39:35.520 and really think about this

NOTE Confidence: 0.99274904

00:39:35.520 --> 00:39:36.580 as kind of a holistic

NOTE Confidence: 0.9187012

00:39:37.665 --> 00:39:38.945 psychiatric symptoms or core to

NOTE Confidence: 0.9187012

00:39:38.945 --> 00:39:40.085 the underlying pathology.

NOTE Confidence: 0.9980469

00:39:40.705 --> 00:39:42.465 And then specific genetic conditions

NOTE Confidence: 0.9980469

00:39:42.465 --> 00:39:43.605 associated with neurodevelopmental

NOTE Confidence: 0.9320509

00:39:43.985 --> 00:39:46.245 disorders, syndromes like Phelan McDermid,

NOTE Confidence: 0.9320509

00:39:46.385 --> 00:39:48.705 Syngap, Rett Syndrome, CDK, L

NOTE Confidence: 0.9320509

00:39:48.705 --> 00:39:49.905 five, and twenty two q

NOTE Confidence: 0.9320509

00:39:49.905 --> 00:39:51.450 eleven point two, where we

NOTE Confidence: 0.9320509

00:39:51.450 --> 00:39:53.310 increasingly understand the biology,

NOTE Confidence: 0.9984375

00:39:53.849 --> 00:39:54.650 but we don't have a

NOTE Confidence: 0.9984375

00:39:54.650 --> 00:39:56.190 good treatment base for it.

NOTE Confidence: 0.99328613

00:39:57.130 --> 00:39:58.430 I also wanna highlight

NOTE Confidence: 0.982666

00:39:58.969 --> 00:40:00.330 where our evidence base stands

NOTE Confidence: 0.982666

00:40:00.330 --> 00:40:01.150 in this population.

NOTE Confidence: 0.97307795

00:40:01.849 --> 00:40:03.369 So right now, there are

NOTE Confidence: 0.97307795

00:40:03.369 --> 00:40:05.290 two FDA approved medications for

NOTE Confidence: 0.97307795

00:40:05.290 --> 00:40:05.790 autism,

NOTE Confidence: 0.97586495

00:40:06.474 --> 00:40:08.175 both addressing a single behavioral

NOTE Confidence: 0.97586495

00:40:08.234 --> 00:40:09.135 domain broadly.

NOTE Confidence: 0.9422983

00:40:09.594 --> 00:40:11.454 And it's the entire regulatory

NOTE Confidence: 0.9422983

00:40:11.594 --> 00:40:12.875 evidence base for a condition

NOTE Confidence: 0.9422983

00:40:12.875 --> 00:40:14.474 affecting roughly one in thirty

NOTE Confidence: 0.9422983

00:40:14.474 --> 00:40:15.915 one kids, separate from the

NOTE Confidence: 0.9422983

00:40:15.915 --> 00:40:17.515 genetic syndromes and the intellectual

NOTE Confidence: 0.9422983

00:40:17.515 --> 00:40:18.015 disability.

NOTE Confidence: 0.98538816

00:40:18.750 --> 00:40:19.890 And it's not a failure

NOTE Confidence: 0.98538816

00:40:19.950 --> 00:40:21.630 of scientific interest. It's really

NOTE Confidence: 0.98538816

00:40:21.630 --> 00:40:23.550 a structural failure, and that's

NOTE Confidence: 0.98538816

00:40:23.550 --> 00:40:24.770 what I'm gonna talk about.

NOTE Confidence: 0.9941406

00:40:25.630 --> 00:40:26.530 So we

NOTE Confidence: 0.92978513

00:40:26.830 --> 00:40:27.710 you know, why is the

NOTE Confidence: 0.92978513

00:40:27.710 --> 00:40:29.310 evidence base so thin? And

NOTE Confidence: 0.92978513

00:40:29.310 --> 00:40:30.750 argue it comes down to

NOTE Confidence: 0.92978513

00:40:30.750 --> 00:40:32.510 three failures that compound each

NOTE Confidence: 0.92978513

00:40:32.510 --> 00:40:33.855 other in a reinforcing cycle.

NOTE Confidence: 0.9987386

00:40:34.415 --> 00:40:35.535 Cycle. So the first is

NOTE Confidence: 0.9987386

00:40:35.535 --> 00:40:37.295 fragmented measurement. So there's no

NOTE Confidence: 0.9987386

00:40:37.295 --> 00:40:38.895 standard approach to data collection

NOTE Confidence: 0.9987386

00:40:38.895 --> 00:40:39.795 for these patients.

NOTE Confidence: 0.97618407

00:40:40.175 --> 00:40:42.094 Clinicians use different tools, different

NOTE Confidence: 0.97618407

00:40:42.094 --> 00:40:43.535 rating scales, or no structured

NOTE Confidence: 0.97618407

00:40:43.535 --> 00:40:45.455 measures at all. The results

NOTE Confidence: 0.97618407

00:40:45.455 --> 00:40:46.755 is that there's no longitudinal

NOTE Confidence: 0.97753906

00:40:47.055 --> 00:40:48.575 baseline from which to detect

NOTE Confidence: 0.97753906

00:40:48.575 --> 00:40:50.489 change. If a patient with

NOTE Confidence: 0.97753906

00:40:50.489 --> 00:40:52.170 severe or profound autism presents

NOTE Confidence: 0.97753906

00:40:52.170 --> 00:40:52.830 in crisis,

NOTE Confidence: 0.99639213

00:40:53.130 --> 00:40:54.570 you have no objective ground

NOTE Confidence: 0.99639213

00:40:54.570 --> 00:40:55.950 truth to compare against.

NOTE Confidence: 0.98023015

00:40:56.570 --> 00:40:58.170 Was this behavior present six

NOTE Confidence: 0.98023015

00:40:58.170 --> 00:40:59.710 months ago? Is this baseline?

NOTE Confidence: 0.98023015

00:40:59.770 --> 00:41:01.050 Is this a chronic poor

NOTE Confidence: 0.98023015

00:41:01.050 --> 00:41:01.930 behavior, or is this an

NOTE Confidence: 0.98023015

00:41:01.930 --> 00:41:02.830 acute change?

NOTE Confidence: 0.9970703

00:41:03.210 --> 00:41:03.950 We genuinely

NOTE Confidence: 0.9811876

00:41:04.375 --> 00:41:06.055 don't know with data to

NOTE Confidence: 0.9811876

00:41:06.055 --> 00:41:07.255 support us, not because no

NOTE Confidence: 0.9811876

00:41:07.255 --> 00:41:08.375 one was paying attention, but

NOTE Confidence: 0.9811876

00:41:08.375 --> 00:41:09.275 because the infrastructure

NOTE Confidence: 0.992513

00:41:10.135 --> 00:41:11.415 in our health system wasn't

NOTE Confidence: 0.992513

00:41:11.415 --> 00:41:12.795 built to capture it.

NOTE Confidence: 0.9946289

00:41:13.655 --> 00:41:15.495 The second failure is really

NOTE Confidence: 0.9946289

00:41:15.495 --> 00:41:16.555 systematic exclusion.

NOTE Confidence: 0.99746096

00:41:17.040 --> 00:41:18.980 So clinical trials almost universally

NOTE Confidence: 0.9996745

00:41:19.360 --> 00:41:21.380 exclude individuals with severe intellectual

NOTE Confidence: 0.9996745

00:41:21.440 --> 00:41:21.940 disability,

NOTE Confidence: 0.98913574

00:41:22.400 --> 00:41:24.900 nonverbal communication, or significant behavioral

NOTE Confidence: 0.98913574

00:41:25.040 --> 00:41:25.540 presentations,

NOTE Confidence: 0.9985596

00:41:26.160 --> 00:41:27.600 which are exactly the patients

NOTE Confidence: 0.9985596

00:41:27.600 --> 00:41:29.860 who most need empirical evidence.

NOTE Confidence: 0.9788128

00:41:30.755 --> 00:41:32.035 And the evidence base was

NOTE Confidence: 0.9788128

00:41:32.035 --> 00:41:33.315 built on people who don't

NOTE Confidence: 0.9788128

00:41:33.315 --> 00:41:34.835 represent the clinical population of

NOTE Confidence: 0.9788128

00:41:34.835 --> 00:41:35.875 who's coming to see child

NOTE Confidence: 0.9788128

00:41:35.875 --> 00:41:37.175 psychiatrists the most.

NOTE Confidence: 0.99612427

00:41:37.795 --> 00:41:39.075 And then the third failure

NOTE Confidence: 0.99612427

00:41:39.075 --> 00:41:40.055 is poor translation.

NOTE Confidence: 0.99985534

00:41:40.355 --> 00:41:41.875 So even the evidence that

NOTE Confidence: 0.99985534

00:41:41.875 --> 00:41:43.094 we have doesn't generalize.

NOTE Confidence: 0.98941576

00:41:43.599 --> 00:41:45.280 We have controlled narrow samples

NOTE Confidence: 0.98941576

00:41:45.280 --> 00:41:46.640 and outcomes that don't match

NOTE Confidence: 0.98941576

00:41:46.640 --> 00:41:48.719 clinical reality. So clinicians default

NOTE Confidence: 0.98941576

00:41:48.719 --> 00:41:49.460 to idiosyncratic

NOTE Confidence: 0.9580078

00:41:49.760 --> 00:41:50.260 practice,

NOTE Confidence: 0.981393

00:41:50.640 --> 00:41:52.560 which generates no data, which

NOTE Confidence: 0.981393

00:41:52.560 --> 00:41:54.160 means the evidence never improves

NOTE Confidence: 0.981393

00:41:54.160 --> 00:41:55.300 and the cycle continues.

NOTE Confidence: 0.99902344

00:41:56.400 --> 00:41:56.900 So

NOTE Confidence: 0.9878856

00:41:57.414 --> 00:41:58.214 what does it look like

NOTE Confidence: 0.9878856

00:41:58.214 --> 00:41:59.414 when this problem has actually

NOTE Confidence: 0.9878856

00:41:59.414 --> 00:42:00.535 been solved? And I wanna

NOTE Confidence: 0.9878856

00:42:00.535 --> 00:42:02.295 use pediatric oncology as a

NOTE Confidence: 0.9878856

00:42:02.295 --> 00:42:03.734 model. And I'm gonna walk

NOTE Confidence: 0.9878856

00:42:03.734 --> 00:42:05.194 through this comparison deliberately

NOTE Confidence: 0.97368515

00:42:05.734 --> 00:42:07.015 and start with two columns.

NOTE Confidence: 0.97368515

00:42:07.015 --> 00:42:07.894 On the left, we have

NOTE Confidence: 0.97368515

00:42:07.894 --> 00:42:09.575 pediatric oncology, which is the

NOTE Confidence: 0.97368515

00:42:09.575 --> 00:42:10.934 ACHIEVE standard, and on the

NOTE Confidence: 0.97368515

00:42:10.934 --> 00:42:11.434 right,

NOTE Confidence: 0.9536404

00:42:12.160 --> 00:42:13.300 NDD or neurodevelopmental

NOTE Confidence: 0.9248047

00:42:13.600 --> 00:42:15.760 disorders psychiatry today and the

NOTE Confidence: 0.9248047

00:42:15.760 --> 00:42:17.120 kind of the clinical reality,

NOTE Confidence: 0.9248047

00:42:17.120 --> 00:42:18.000 and I'll take you for

NOTE Confidence: 0.9248047

00:42:18.160 --> 00:42:19.600 through four dimensions one at

NOTE Confidence: 0.9248047

00:42:19.600 --> 00:42:20.180 a time.

NOTE Confidence: 0.9980794

00:42:21.280 --> 00:42:22.560 So the first dimension is

NOTE Confidence: 0.9980794

00:42:22.560 --> 00:42:24.400 measurement. So in pediatric oncology,

NOTE Confidence: 0.9980794

00:42:24.400 --> 00:42:26.180 we have standardized outcome measures

NOTE Confidence: 0.9787772

00:42:26.945 --> 00:42:28.864 embedded across essentially all treatment

NOTE Confidence: 0.9787772

00:42:28.864 --> 00:42:31.025 centers, every patient, every visit

NOTE Confidence: 0.9787772

00:42:31.025 --> 00:42:32.165 using the same tools.

NOTE Confidence: 0.9842285

00:42:32.465 --> 00:42:33.265 And then when we think

NOTE Confidence: 0.9842285

00:42:33.265 --> 00:42:35.025 about NDD psychiatry, we have

NOTE Confidence: 0.9842285

00:42:35.025 --> 00:42:37.125 non overlapping measures across clinicians,

NOTE Confidence: 0.98924804

00:42:37.425 --> 00:42:39.090 heavy reliance on free text.

NOTE Confidence: 0.98924804

00:42:39.330 --> 00:42:41.090 There's no standard. Two clinicians

NOTE Confidence: 0.98924804

00:42:41.090 --> 00:42:42.210 in the same department may

NOTE Confidence: 0.98924804

00:42:42.210 --> 00:42:43.730 use entirely different approaches to

NOTE Confidence: 0.98924804

00:42:43.730 --> 00:42:45.670 capture the same same information

NOTE Confidence: 0.9362793

00:42:46.210 --> 00:42:47.170 if they capture it at

NOTE Confidence: 0.9362793

00:42:47.170 --> 00:42:47.670 all.

NOTE Confidence: 0.99129885

00:42:48.770 --> 00:42:50.130 The second dimension is how

NOTE Confidence: 0.99129885

00:42:50.130 --> 00:42:51.625 evidence gets built. So in

NOTE Confidence: 0.99129885

00:42:51.625 --> 00:42:53.065 oncology, the field learns from

NOTE Confidence: 0.99129885

00:42:53.065 --> 00:42:54.745 nearly every patient, not just

NOTE Confidence: 0.99129885

00:42:54.745 --> 00:42:56.285 the subset enrolled in trials.

NOTE Confidence: 0.87353516

00:42:57.145 --> 00:42:57.645 Data,

NOTE Confidence: 0.99769175

00:42:58.185 --> 00:43:00.185 we can aggregate and becomes

NOTE Confidence: 0.99769175

00:43:00.185 --> 00:43:01.945 cumulative across time and across

NOTE Confidence: 0.99769175

00:43:01.945 --> 00:43:02.445 sites.

NOTE Confidence: 0.99729

00:43:03.065 --> 00:43:05.270 In our population, most patients

NOTE Confidence: 0.99729

00:43:05.270 --> 00:43:07.190 contribute almost nothing to the

NOTE Confidence: 0.99729

00:43:07.190 --> 00:43:08.630 evidence base in terms of

NOTE Confidence: 0.99729

00:43:08.630 --> 00:43:10.570 learning from each individual case.

NOTE Confidence: 0.9847778

00:43:10.950 --> 00:43:12.230 The data that does exist

NOTE Confidence: 0.9847778

00:43:12.230 --> 00:43:13.930 cannot be aggregated or compared,

NOTE Confidence: 0.9847778

00:43:14.070 --> 00:43:15.030 and we have no way

NOTE Confidence: 0.9847778

00:43:15.030 --> 00:43:16.969 to accumulate knowledge across encounters.

NOTE Confidence: 0.9979248

00:43:18.815 --> 00:43:20.275 The third dimension is generalizability.

NOTE Confidence: 0.9958414

00:43:20.974 --> 00:43:22.815 So oncology generates findings that

NOTE Confidence: 0.9958414

00:43:22.815 --> 00:43:24.494 reflect the full clinical population,

NOTE Confidence: 0.9958414

00:43:24.494 --> 00:43:26.255 including complex cases that would

NOTE Confidence: 0.9958414

00:43:26.255 --> 00:43:28.194 traditionally be excluded from trials.

NOTE Confidence: 0.9635326

00:43:29.055 --> 00:43:31.214 In psychiatry, findings from narrow,

NOTE Confidence: 0.9635326

00:43:31.214 --> 00:43:33.130 controlled samples don't reflect the

NOTE Confidence: 0.9635326

00:43:33.130 --> 00:43:34.570 patients that actually that we

NOTE Confidence: 0.9635326

00:43:34.570 --> 00:43:35.849 actually treat and then actually

NOTE Confidence: 0.9635326

00:43:35.849 --> 00:43:36.810 show up to clinic or

NOTE Confidence: 0.9635326

00:43:36.810 --> 00:43:37.469 the hospital.

NOTE Confidence: 0.9972914

00:43:37.849 --> 00:43:39.210 And a clinician is trying

NOTE Confidence: 0.9972914

00:43:39.210 --> 00:43:40.489 to apply trial results to

NOTE Confidence: 0.9972914

00:43:40.489 --> 00:43:42.030 a patient with severe intellectual

NOTE Confidence: 0.9972914

00:43:42.090 --> 00:43:43.550 disability and multiple comorbidities,

NOTE Confidence: 0.9998698

00:43:44.650 --> 00:43:46.330 extrapolating from a population that

NOTE Confidence: 0.9998698

00:43:46.330 --> 00:43:48.030 didn't include anyone like them.

NOTE Confidence: 0.9859009

00:43:49.185 --> 00:43:50.785 And then the fourth dimension

NOTE Confidence: 0.9859009

00:43:50.785 --> 00:43:51.665 and the one that ties

NOTE Confidence: 0.9859009

00:43:51.665 --> 00:43:52.945 everything together is really the

NOTE Confidence: 0.9859009

00:43:52.945 --> 00:43:53.445 infrastructure.

NOTE Confidence: 0.9975993

00:43:53.985 --> 00:43:55.525 So pediatric oncology,

NOTE Confidence: 0.97509766

00:43:56.225 --> 00:43:57.745 you know, like, around two

NOTE Confidence: 0.97509766

00:43:57.745 --> 00:43:58.245 thousand

NOTE Confidence: 0.5625

00:43:58.625 --> 00:43:59.125 built

NOTE Confidence: 0.9727539

00:43:59.505 --> 00:44:01.425 a unified infrastructure for the

NOTE Confidence: 0.9727539

00:44:01.425 --> 00:44:02.980 purpose of this. Because kids

NOTE Confidence: 0.9727539

00:44:02.980 --> 00:44:03.860 were dying, and they were

NOTE Confidence: 0.9727539

00:44:03.860 --> 00:44:05.000 like, we need to do

NOTE Confidence: 0.9727539

00:44:05.060 --> 00:44:06.360 a better job of this.

NOTE Confidence: 0.9700195

00:44:06.980 --> 00:44:08.680 And it's a unified infrastructure

NOTE Confidence: 0.9700195

00:44:08.739 --> 00:44:09.700 no matter where you go

NOTE Confidence: 0.9700195

00:44:09.700 --> 00:44:11.940 that simultaneously supports clinical care

NOTE Confidence: 0.9700195

00:44:11.940 --> 00:44:13.380 trials and natural history in

NOTE Confidence: 0.9700195

00:44:13.380 --> 00:44:14.840 terms of what actually happens.

NOTE Confidence: 0.9876506

00:44:15.344 --> 00:44:16.385 So we have one system

NOTE Confidence: 0.9876506

00:44:16.385 --> 00:44:18.305 with multiple purposes. And in

NOTE Confidence: 0.9876506

00:44:18.305 --> 00:44:19.285 NDD psychiatry,

NOTE Confidence: 0.9980469

00:44:19.585 --> 00:44:20.885 clinical care and research

NOTE Confidence: 0.9995931

00:44:21.505 --> 00:44:22.805 are completely siloed.

NOTE Confidence: 0.9945801

00:44:23.105 --> 00:44:24.224 They don't feed each other.

NOTE Confidence: 0.9945801

00:44:24.224 --> 00:44:25.765 The data generated in clinic

NOTE Confidence: 0.96165246

00:44:26.065 --> 00:44:27.760 doesn't reach research, and the

NOTE Confidence: 0.96165246

00:44:27.760 --> 00:44:29.920 evidence generated research doesn't reflect

NOTE Confidence: 0.96165246

00:44:29.920 --> 00:44:31.460 what clinicians actually see.

NOTE Confidence: 0.98713106

00:44:32.000 --> 00:44:33.840 And the contrast isn't because

NOTE Confidence: 0.98713106

00:44:33.840 --> 00:44:35.440 oncology is more important. It's

NOTE Confidence: 0.98713106

00:44:35.440 --> 00:44:36.720 because they made a deliberate

NOTE Confidence: 0.98713106

00:44:36.720 --> 00:44:38.239 infrastructure investment a really long

NOTE Confidence: 0.98713106

00:44:38.239 --> 00:44:39.520 time ago, and that's what

NOTE Confidence: 0.98713106

00:44:39.520 --> 00:44:41.140 I'm proposing that we do,

NOTE Confidence: 0.99993026

00:44:41.885 --> 00:44:42.844 which brings me to the

NOTE Confidence: 0.99993026

00:44:42.844 --> 00:44:43.505 next slide.

NOTE Confidence: 1

00:44:43.964 --> 00:44:44.464 So

NOTE Confidence: 0.97350836

00:44:44.844 --> 00:44:46.864 at Boston Children's, I'm building

NOTE Confidence: 0.97350836

00:44:46.925 --> 00:44:48.605 a measurement based care system

NOTE Confidence: 0.97350836

00:44:48.605 --> 00:44:50.625 embedded directly in Epic EHR,

NOTE Confidence: 0.97350836

00:44:50.685 --> 00:44:51.425 which is

NOTE Confidence: 0.9976562

00:44:51.805 --> 00:44:53.265 a tool used at, like,

NOTE Confidence: 0.9987793

00:44:53.700 --> 00:44:54.900 more than half of, like,

NOTE Confidence: 0.9987793

00:44:54.900 --> 00:44:55.960 all of the hospitals

NOTE Confidence: 0.9914551

00:44:56.339 --> 00:44:57.320 across the country,

NOTE Confidence: 1

00:44:57.700 --> 00:44:58.440 which is

NOTE Confidence: 0.96569824

00:44:59.460 --> 00:45:00.900 important because it talks speaks

NOTE Confidence: 0.96569824

00:45:00.900 --> 00:45:01.560 to generalizability.

NOTE Confidence: 0.99609375

00:45:02.420 --> 00:45:02.900 And,

NOTE Confidence: 0.9619516

00:45:03.540 --> 00:45:04.820 you know, people like Jamie

NOTE Confidence: 0.9619516

00:45:04.820 --> 00:45:05.940 and Adam taught me fancy

NOTE Confidence: 0.9619516

00:45:05.940 --> 00:45:06.920 words like harmonization

NOTE Confidence: 0.9939643

00:45:07.219 --> 00:45:08.655 of data. And that's been

NOTE Confidence: 0.9939643

00:45:08.655 --> 00:45:09.695 really important in terms of

NOTE Confidence: 0.9939643

00:45:09.695 --> 00:45:10.575 how we think about this

NOTE Confidence: 0.9939643

00:45:10.575 --> 00:45:11.395 from the start.

NOTE Confidence: 0.99902344

00:45:11.695 --> 00:45:12.195 So

NOTE Confidence: 0.98554265

00:45:12.735 --> 00:45:14.015 we're building this design from

NOTE Confidence: 0.98554265

00:45:14.015 --> 00:45:15.055 the ground up for patients

NOTE Confidence: 0.98554265

00:45:15.055 --> 00:45:16.415 who can't self report. And

NOTE Confidence: 0.98554265

00:45:16.415 --> 00:45:17.455 I'm gonna walk you through

NOTE Confidence: 0.98554265

00:45:17.455 --> 00:45:18.355 how it works.

NOTE Confidence: 0.9941406

00:45:19.695 --> 00:45:20.594 And it starts

NOTE Confidence: 0.9920654

00:45:21.060 --> 00:45:22.420 with a patient and their

NOTE Confidence: 0.9920654

00:45:22.420 --> 00:45:24.180 caregiver arriving to a routine

NOTE Confidence: 0.9920654

00:45:24.180 --> 00:45:25.080 clinic visit.

NOTE Confidence: 0.9680176

00:45:25.460 --> 00:45:27.540 Nothing special. Nothing extra. Just

NOTE Confidence: 0.9680176

00:45:27.540 --> 00:45:28.520 a standard appointment.

NOTE Confidence: 0.99768066

00:45:29.219 --> 00:45:30.260 The whole purpose of this

NOTE Confidence: 0.99768066

00:45:30.260 --> 00:45:31.380 is that, like, these are

NOTE Confidence: 0.99768066

00:45:31.380 --> 00:45:32.360 families who

NOTE Confidence: 0.99238724

00:45:33.055 --> 00:45:34.175 go to the doctor more

NOTE Confidence: 0.99238724

00:45:34.175 --> 00:45:35.775 than, like, anyone else. Most

NOTE Confidence: 0.99238724

00:45:35.775 --> 00:45:37.235 of the caregivers I see,

NOTE Confidence: 0.99238724

00:45:37.535 --> 00:45:38.815 they can't even have jobs

NOTE Confidence: 0.99238724

00:45:38.815 --> 00:45:40.015 because they're spending all of

NOTE Confidence: 0.99238724

00:45:40.015 --> 00:45:41.295 their time taking their kids

NOTE Confidence: 0.99238724

00:45:41.295 --> 00:45:42.355 to doctor's appointments.

NOTE Confidence: 0.96866864

00:45:42.895 --> 00:45:44.335 But yet we're not collecting

NOTE Confidence: 0.96866864

00:45:44.335 --> 00:45:46.015 data that can actually help

NOTE Confidence: 0.96866864

00:45:46.015 --> 00:45:46.650 their kid

NOTE Confidence: 0.9593331

00:45:47.210 --> 00:45:48.489 in in a larger scheme

NOTE Confidence: 0.9593331

00:45:48.489 --> 00:45:49.230 for research.

NOTE Confidence: 0.9981515

00:45:49.849 --> 00:45:50.969 So our goal is really

NOTE Confidence: 0.9981515

00:45:50.969 --> 00:45:52.410 to reduce burden and do

NOTE Confidence: 0.9981515

00:45:52.410 --> 00:45:54.190 this in standard care.

NOTE Confidence: 0.99993896

00:45:55.210 --> 00:45:56.349 So when they check-in,

NOTE Confidence: 0.930542

00:45:56.650 --> 00:45:58.349 we're kinda pushing out,

NOTE Confidence: 0.9818374

00:45:59.015 --> 00:46:00.455 and prompting the caregiver to

NOTE Confidence: 0.9818374

00:46:00.455 --> 00:46:01.815 complete a structured battery of

NOTE Confidence: 0.9818374

00:46:01.815 --> 00:46:03.815 validated proxy measures that are

NOTE Confidence: 0.9818374

00:46:03.815 --> 00:46:05.575 caregiver report instruments that span

NOTE Confidence: 0.9818374

00:46:05.575 --> 00:46:07.415 the key domains relevant to

NOTE Confidence: 0.9818374

00:46:07.415 --> 00:46:08.935 our NDD patients in terms

NOTE Confidence: 0.9818374

00:46:08.935 --> 00:46:10.155 of behavior, function,

NOTE Confidence: 0.9786784

00:46:10.455 --> 00:46:11.915 motor adaptive skills.

NOTE Confidence: 0.99555314

00:46:12.350 --> 00:46:13.950 It's automated. It doesn't require

NOTE Confidence: 0.99555314

00:46:13.950 --> 00:46:15.150 the clinician using their brain

NOTE Confidence: 0.99555314

00:46:15.150 --> 00:46:16.270 and, like, remembering to do

NOTE Confidence: 0.99555314

00:46:16.270 --> 00:46:17.310 this among the nine thousand

NOTE Confidence: 0.99555314

00:46:17.310 --> 00:46:18.190 other things they need to

NOTE Confidence: 0.99555314

00:46:18.190 --> 00:46:19.650 do. It also

NOTE Confidence: 0.98456186

00:46:20.270 --> 00:46:22.030 feeds directly back into the

NOTE Confidence: 0.98456186

00:46:22.030 --> 00:46:23.550 clinical record. So by the

NOTE Confidence: 0.98456186

00:46:23.550 --> 00:46:24.430 time they make it in

NOTE Confidence: 0.98456186

00:46:24.430 --> 00:46:26.445 the room, it is built

NOTE Confidence: 0.98456186

00:46:26.445 --> 00:46:27.725 into your note so that

NOTE Confidence: 0.98456186

00:46:27.725 --> 00:46:28.845 the clinician is able to

NOTE Confidence: 0.98456186

00:46:28.845 --> 00:46:29.965 use this, and it's not

NOTE Confidence: 0.98456186

00:46:29.965 --> 00:46:31.645 like, let me type in

NOTE Confidence: 0.98456186

00:46:31.645 --> 00:46:32.525 this thing and ask you

NOTE Confidence: 0.98456186

00:46:32.525 --> 00:46:33.805 this question. It's, like, to

NOTE Confidence: 0.98456186

00:46:33.805 --> 00:46:35.105 make people's lives easier.

NOTE Confidence: 0.9395345

00:46:35.885 --> 00:46:37.325 It happens at home when

NOTE Confidence: 0.9395345

00:46:37.325 --> 00:46:38.205 they have time in the

NOTE Confidence: 0.9395345

00:46:38.205 --> 00:46:39.505 waiting room on a tablet.

NOTE Confidence: 0.9847294

00:46:39.989 --> 00:46:41.430 There's no extra visit, no

NOTE Confidence: 0.9847294

00:46:41.430 --> 00:46:43.110 re separate research consent, and

NOTE Confidence: 0.9847294

00:46:43.110 --> 00:46:44.230 no additional burden on the

NOTE Confidence: 0.9847294

00:46:44.230 --> 00:46:45.750 family. It's part of collecting

NOTE Confidence: 0.9847294

00:46:45.750 --> 00:46:47.210 the data that we're otherwise

NOTE Confidence: 0.9847294

00:46:47.270 --> 00:46:48.310 collecting in a way that's

NOTE Confidence: 0.9847294

00:46:48.310 --> 00:46:48.810 organized.

NOTE Confidence: 0.97515535

00:46:53.184 --> 00:46:54.385 So we kind of are

NOTE Confidence: 0.97515535

00:46:54.385 --> 00:46:55.984 able to map trajectories. It's

NOTE Confidence: 0.97515535

00:46:55.984 --> 00:46:57.344 all getting incorporated. There are

NOTE Confidence: 0.97515535

00:46:57.344 --> 00:46:58.464 really cool ways that we're

NOTE Confidence: 0.97515535

00:46:58.464 --> 00:47:00.145 starting to do this across

NOTE Confidence: 0.97515535

00:47:00.145 --> 00:47:02.724 other specialties incorporating genetics, developmental

NOTE Confidence: 0.97515535

00:47:02.785 --> 00:47:03.285 medicine,

NOTE Confidence: 0.9913737

00:47:03.825 --> 00:47:04.325 neurology,

NOTE Confidence: 0.9441406

00:47:05.750 --> 00:47:07.369 and even going down to

NOTE Confidence: 0.98828125

00:47:07.670 --> 00:47:09.190 really address the question of

NOTE Confidence: 0.98828125

00:47:09.190 --> 00:47:10.329 developmental milestones,

NOTE Confidence: 0.98333335

00:47:10.630 --> 00:47:11.510 which when I'm seeing a

NOTE Confidence: 0.98333335

00:47:11.510 --> 00:47:12.390 kid for the first time

NOTE Confidence: 0.98333335

00:47:12.390 --> 00:47:13.609 at, like, nine or ten,

NOTE Confidence: 0.9865535

00:47:14.309 --> 00:47:15.829 they don't remember, like, when

NOTE Confidence: 0.9865535

00:47:15.829 --> 00:47:16.950 they first had a social

NOTE Confidence: 0.9865535

00:47:16.950 --> 00:47:18.250 smile or when

NOTE Confidence: 0.96076405

00:47:18.855 --> 00:47:20.855 they first took steps or

NOTE Confidence: 0.96076405

00:47:20.855 --> 00:47:21.895 when they lost that if

NOTE Confidence: 0.96076405

00:47:21.895 --> 00:47:22.935 they did, which, you know,

NOTE Confidence: 0.96076405

00:47:22.935 --> 00:47:24.535 does come up. So we're

NOTE Confidence: 0.96076405

00:47:24.535 --> 00:47:26.315 working to build a structured

NOTE Confidence: 0.96076405

00:47:26.455 --> 00:47:28.135 in the pediatric primary care

NOTE Confidence: 0.96076405

00:47:28.135 --> 00:47:29.335 centers as well as our

NOTE Confidence: 0.96076405

00:47:29.335 --> 00:47:30.555 NICU grad clinics

NOTE Confidence: 0.94124347

00:47:30.855 --> 00:47:31.755 to think about

NOTE Confidence: 0.9586426

00:47:32.215 --> 00:47:34.075 building a structure that, like,

NOTE Confidence: 0.9885433

00:47:34.580 --> 00:47:35.780 these people like, we shouldn't

NOTE Confidence: 0.9885433

00:47:35.780 --> 00:47:37.140 be asking them every single

NOTE Confidence: 0.9885433

00:47:37.140 --> 00:47:37.860 time they come to a

NOTE Confidence: 0.9885433

00:47:37.860 --> 00:47:38.739 doctor, when did you take

NOTE Confidence: 0.9885433

00:47:38.739 --> 00:47:40.340 your first steps? That's not

NOTE Confidence: 0.9885433

00:47:40.340 --> 00:47:41.300 changing. And if it is

NOTE Confidence: 0.9885433

00:47:41.300 --> 00:47:42.680 changing, it's because it's inaccurate,

NOTE Confidence: 0.9885433

00:47:42.900 --> 00:47:44.500 not because it actually changed

NOTE Confidence: 0.9885433

00:47:44.500 --> 00:47:45.000 historically.

NOTE Confidence: 0.9633159

00:47:45.540 --> 00:47:46.580 And I think that's a

NOTE Confidence: 0.9633159

00:47:46.580 --> 00:47:47.744 way that, you know, I'm

NOTE Confidence: 0.9633159

00:47:47.744 --> 00:47:48.704 pretty excited because I think

NOTE Confidence: 0.9633159

00:47:48.704 --> 00:47:49.825 that's a really important research

NOTE Confidence: 0.9633159

00:47:49.825 --> 00:47:50.864 data as we think about

NOTE Confidence: 0.9633159

00:47:50.864 --> 00:47:52.144 how do we phenotype these

NOTE Confidence: 0.9633159

00:47:52.144 --> 00:47:52.644 kids.

NOTE Confidence: 0.95198566

00:47:55.265 --> 00:47:56.785 So here's what the single

NOTE Confidence: 0.95198566

00:47:56.785 --> 00:47:58.065 infrastructure enables. So on the

NOTE Confidence: 0.95198566

00:47:58.065 --> 00:47:59.105 left, we have the clinician

NOTE Confidence: 0.95198566

00:47:59.105 --> 00:48:00.450 opening the chart, seeing a

NOTE Confidence: 0.95198566

00:48:00.450 --> 00:48:00.950 longitudinal

NOTE Confidence: 0.9375

00:48:01.250 --> 00:48:03.010 trend, the patient scores across

NOTE Confidence: 0.9375

00:48:03.010 --> 00:48:03.750 twelve visits,

NOTE Confidence: 0.97334427

00:48:05.090 --> 00:48:06.290 over a year flagging a

NOTE Confidence: 0.97334427

00:48:06.290 --> 00:48:07.810 meaningful change from their individual

NOTE Confidence: 0.97334427

00:48:07.810 --> 00:48:08.310 baseline.

NOTE Confidence: 0.9794922

00:48:09.010 --> 00:48:10.450 That decision support that doesn't

NOTE Confidence: 0.9794922

00:48:10.450 --> 00:48:11.570 currently exist for most of

NOTE Confidence: 0.9794922

00:48:11.570 --> 00:48:12.690 these patients, are they getting

NOTE Confidence: 0.9794922

00:48:12.690 --> 00:48:14.290 better or worse? Most of

NOTE Confidence: 0.9794922

00:48:14.290 --> 00:48:15.670 the time, I'm kinda like,

NOTE Confidence: 0.82995605

00:48:16.404 --> 00:48:17.144 Like, maybe.

NOTE Confidence: 0.9933594

00:48:17.844 --> 00:48:18.724 I don't know if it's

NOTE Confidence: 0.9933594

00:48:18.724 --> 00:48:20.184 because, like, they're less constipated

NOTE Confidence: 0.9877387

00:48:20.484 --> 00:48:21.684 or, like, they had a

NOTE Confidence: 0.9877387

00:48:21.684 --> 00:48:22.744 better day at school.

NOTE Confidence: 0.9805634

00:48:23.765 --> 00:48:25.125 I'm doing things like putting

NOTE Confidence: 0.9805634

00:48:25.125 --> 00:48:26.404 them on medication. I can't

NOTE Confidence: 0.9805634

00:48:26.404 --> 00:48:28.005 really reliably answer. Are they

NOTE Confidence: 0.9805634

00:48:28.005 --> 00:48:29.444 better or worse? Which I

NOTE Confidence: 0.9805634

00:48:29.444 --> 00:48:30.565 think data can be really

NOTE Confidence: 0.9805634

00:48:30.565 --> 00:48:32.010 helpful for. And on the

NOTE Confidence: 0.9805634

00:48:32.010 --> 00:48:33.230 right, we have a researcher

NOTE Confidence: 0.9805634

00:48:33.370 --> 00:48:34.730 querying the database and finding

NOTE Confidence: 0.9805634

00:48:34.730 --> 00:48:36.030 a phenotype longitudinally

NOTE Confidence: 0.9921875

00:48:36.330 --> 00:48:37.390 characterized population

NOTE Confidence: 0.96907043

00:48:37.770 --> 00:48:39.370 built from real clinical encounters

NOTE Confidence: 0.96907043

00:48:39.370 --> 00:48:41.610 without eligibility screens, without excluding

NOTE Confidence: 0.96907043

00:48:41.610 --> 00:48:42.570 the patients who need it

NOTE Confidence: 0.96907043

00:48:42.570 --> 00:48:43.070 most,

NOTE Confidence: 0.9992947

00:48:43.530 --> 00:48:44.989 better care for this patient,

NOTE Confidence: 0.9992947

00:48:45.130 --> 00:48:46.510 evidence for all patients,

NOTE Confidence: 0.973999

00:48:47.135 --> 00:48:48.895 the same infrastructure, no additional

NOTE Confidence: 0.973999

00:48:48.895 --> 00:48:49.395 burden.

NOTE Confidence: 0.97452796

00:48:50.255 --> 00:48:51.855 And that's the oncology model

NOTE Confidence: 0.97452796

00:48:51.855 --> 00:48:52.734 in a lot of ways

NOTE Confidence: 0.97452796

00:48:52.734 --> 00:48:53.954 applied to our field.

NOTE Confidence: 0.92614746

00:48:55.454 --> 00:48:57.155 So because we're capturing

NOTE Confidence: 0.97474504

00:48:57.775 --> 00:48:59.855 pharmacologic and behavioral interventions at

NOTE Confidence: 0.97474504

00:48:59.855 --> 00:49:00.994 every visit in Epic,

NOTE Confidence: 0.99746984

00:49:01.960 --> 00:49:03.640 the same infrastructure allows you

NOTE Confidence: 0.99746984

00:49:03.640 --> 00:49:05.560 to track treatment and inflection

NOTE Confidence: 0.99746984

00:49:05.560 --> 00:49:06.060 points

NOTE Confidence: 0.976888

00:49:06.360 --> 00:49:07.719 in terms of what actually

NOTE Confidence: 0.976888

00:49:07.719 --> 00:49:09.739 happens. Does this treatment work,

NOTE Confidence: 0.976888

00:49:09.960 --> 00:49:11.400 or did it not? Is

NOTE Confidence: 0.976888

00:49:11.400 --> 00:49:12.600 this the natural history of

NOTE Confidence: 0.976888

00:49:12.600 --> 00:49:13.719 this condition and they're just

NOTE Confidence: 0.976888

00:49:13.719 --> 00:49:15.015 getting better? Or did we

NOTE Confidence: 0.976888

00:49:15.015 --> 00:49:16.295 really do something with this

NOTE Confidence: 0.976888

00:49:16.295 --> 00:49:16.795 intervention?

NOTE Confidence: 0.9848633

00:49:17.174 --> 00:49:18.295 And that's a really important

NOTE Confidence: 0.9848633

00:49:18.295 --> 00:49:18.795 question.

NOTE Confidence: 0.9810927

00:49:19.174 --> 00:49:20.775 When we're kind of offering

NOTE Confidence: 0.9810927

00:49:20.775 --> 00:49:21.835 all of these things,

NOTE Confidence: 0.9898179

00:49:22.135 --> 00:49:23.655 we need to answer, did

NOTE Confidence: 0.9898179

00:49:23.655 --> 00:49:24.855 this medicine make a difference

NOTE Confidence: 0.9898179

00:49:24.855 --> 00:49:26.055 or did it not? If

NOTE Confidence: 0.9898179

00:49:26.055 --> 00:49:27.094 it didn't make any difference,

NOTE Confidence: 0.9898179

00:49:27.094 --> 00:49:27.974 I don't wanna keep giving

NOTE Confidence: 0.9898179

00:49:27.974 --> 00:49:28.694 it to them with all

NOTE Confidence: 0.9898179

00:49:28.694 --> 00:49:29.755 sorts of side effects.

NOTE Confidence: 0.9900716

00:49:31.469 --> 00:49:32.430 And this is kind of

NOTE Confidence: 0.9900716

00:49:32.430 --> 00:49:34.030 how we fuel all these

NOTE Confidence: 0.9900716

00:49:34.030 --> 00:49:34.770 things together.

NOTE Confidence: 0.9961395

00:49:35.310 --> 00:49:36.750 So I'm gonna jump to

NOTE Confidence: 0.9961395

00:49:36.750 --> 00:49:37.810 talk about catatonia,

NOTE Confidence: 0.9949951

00:49:39.070 --> 00:49:40.290 because I think it's

NOTE Confidence: 0.9962891

00:49:40.670 --> 00:49:42.530 a model syndrome that really

NOTE Confidence: 0.9872233

00:49:44.005 --> 00:49:45.125 drives this point home, and

NOTE Confidence: 0.9872233

00:49:45.125 --> 00:49:45.925 it's something I see a

NOTE Confidence: 0.9872233

00:49:45.925 --> 00:49:46.665 lot of.

NOTE Confidence: 0.99400043

00:49:48.484 --> 00:49:49.605 I suspect some of you

NOTE Confidence: 0.99400043

00:49:49.605 --> 00:49:50.565 in this room have seen

NOTE Confidence: 0.99400043

00:49:50.565 --> 00:49:52.405 it without recognizing it, but

NOTE Confidence: 0.99400043

00:49:52.405 --> 00:49:53.224 it's a neuropsychiatric

NOTE Confidence: 0.9748419

00:49:53.605 --> 00:49:55.205 syndrome of motor behavioral and

NOTE Confidence: 0.9748419

00:49:55.205 --> 00:49:56.265 autonomic dysregulation.

NOTE Confidence: 0.9068359

00:49:57.780 --> 00:49:59.400 Typically, we're treating with benzodiazepines

NOTE Confidence: 0.90950525

00:49:59.860 --> 00:50:00.520 and ECT.

NOTE Confidence: 0.9232201

00:50:00.980 --> 00:50:03.080 And in NDD, inpatient populations,

NOTE Confidence: 0.9232201

00:50:03.219 --> 00:50:04.900 in in general, the prevalence

NOTE Confidence: 0.9232201

00:50:04.900 --> 00:50:06.420 estimates range from roughly ten

NOTE Confidence: 0.9232201

00:50:06.420 --> 00:50:07.560 to seventeen percent.

NOTE Confidence: 0.992296

00:50:09.060 --> 00:50:10.100 And just to walk through

NOTE Confidence: 0.992296

00:50:10.100 --> 00:50:11.160 what it looks like,

NOTE Confidence: 0.9926323

00:50:11.465 --> 00:50:12.825 the motor features are what

NOTE Confidence: 0.9926323

00:50:12.825 --> 00:50:13.785 most people think of when

NOTE Confidence: 0.9926323

00:50:13.785 --> 00:50:14.925 they hear the word catatonia

NOTE Confidence: 0.9891531

00:50:15.305 --> 00:50:17.005 catatonia in terms of stupor,

NOTE Confidence: 0.9891531

00:50:17.065 --> 00:50:18.125 mutism, rigidity,

NOTE Confidence: 0.96777344

00:50:18.665 --> 00:50:20.844 but also posturing, waxy flexibility,

NOTE Confidence: 0.84716797

00:50:21.225 --> 00:50:21.725 stereotypies,

NOTE Confidence: 0.9423828

00:50:22.745 --> 00:50:24.125 echopraxia or echolalia,

NOTE Confidence: 0.89849854

00:50:24.665 --> 00:50:25.864 refusal to eat or drink,

NOTE Confidence: 0.89849854

00:50:25.864 --> 00:50:26.685 and gait disturbance.

NOTE Confidence: 0.9827016

00:50:27.225 --> 00:50:28.770 They're dramatic findings when they're

NOTE Confidence: 0.9827016

00:50:28.770 --> 00:50:29.890 present. But in a patient

NOTE Confidence: 0.9827016

00:50:29.890 --> 00:50:31.489 who already has ASD or

NOTE Confidence: 0.9827016

00:50:31.489 --> 00:50:31.989 IDD,

NOTE Confidence: 0.9930061

00:50:32.370 --> 00:50:33.489 they can be subtle or

NOTE Confidence: 0.9930061

00:50:33.489 --> 00:50:35.010 attributed to the underlying condition,

NOTE Confidence: 0.9930061

00:50:35.010 --> 00:50:35.810 and there's a lot of

NOTE Confidence: 0.9930061

00:50:35.810 --> 00:50:36.950 diagnostic overshadowing.

NOTE Confidence: 0.9859212

00:50:38.370 --> 00:50:39.810 The behavioral features are where

NOTE Confidence: 0.9859212

00:50:39.810 --> 00:50:40.710 it gets diagnostically

NOTE Confidence: 0.93025714

00:50:41.755 --> 00:50:42.955 treacherous to say the least

NOTE Confidence: 0.93025714

00:50:42.955 --> 00:50:44.234 because we see withdrawal, loss

NOTE Confidence: 0.93025714

00:50:44.234 --> 00:50:44.974 of engagement,

NOTE Confidence: 0.9995117

00:50:45.515 --> 00:50:46.895 agitation, self injury,

NOTE Confidence: 0.9983724

00:50:47.355 --> 00:50:48.255 loss of previously

NOTE Confidence: 0.9201253

00:50:48.875 --> 00:50:50.395 acquired skills, and regression in

NOTE Confidence: 0.9201253

00:50:50.395 --> 00:50:51.755 activities of daily living and

NOTE Confidence: 0.9201253

00:50:51.755 --> 00:50:52.815 social withdrawal.

NOTE Confidence: 0.96162415

00:50:53.770 --> 00:50:55.050 Every one of those features

NOTE Confidence: 0.96162415

00:50:55.050 --> 00:50:56.170 could be and often is

NOTE Confidence: 0.96162415

00:50:56.170 --> 00:50:58.250 attributed to behavioral deterioration in

NOTE Confidence: 0.96162415

00:50:58.250 --> 00:50:58.750 autism.

NOTE Confidence: 0.99278766

00:50:59.690 --> 00:51:01.310 They're not specific to catatonia.

NOTE Confidence: 0.99278766

00:51:01.450 --> 00:51:02.330 And in a patient who

NOTE Confidence: 0.99278766

00:51:02.330 --> 00:51:03.370 can't tell you what's wrong,

NOTE Confidence: 0.99278766

00:51:03.370 --> 00:51:04.730 the overlap with the underlying

NOTE Confidence: 0.99278766

00:51:04.730 --> 00:51:05.950 condition makes the diagnosis

NOTE Confidence: 0.9970703

00:51:06.410 --> 00:51:07.550 genuinely hard.

NOTE Confidence: 0.99196553

00:51:08.145 --> 00:51:09.185 I hope no one ever

NOTE Confidence: 0.99196553

00:51:09.185 --> 00:51:10.065 looks at me and says,

NOTE Confidence: 0.99196553

00:51:10.065 --> 00:51:10.565 like,

NOTE Confidence: 0.96889305

00:51:10.864 --> 00:51:13.025 Max suddenly, like, stopped using

NOTE Confidence: 0.96889305

00:51:13.025 --> 00:51:14.225 a toilet after he did

NOTE Confidence: 0.96889305

00:51:14.225 --> 00:51:15.265 for, like, his entire life

NOTE Confidence: 0.96889305

00:51:15.265 --> 00:51:16.225 and says, like, oh, that

NOTE Confidence: 0.96889305

00:51:16.305 --> 00:51:18.145 that's just Max. Because that's,

NOTE Confidence: 0.96889305

00:51:18.145 --> 00:51:19.185 like, really what happens to

NOTE Confidence: 0.96889305

00:51:19.185 --> 00:51:19.985 a lot of these kids,

NOTE Confidence: 0.96889305

00:51:19.985 --> 00:51:20.705 and we're seeing them in

NOTE Confidence: 0.96889305

00:51:20.705 --> 00:51:21.825 clinic. We're like, that is

NOTE Confidence: 0.96889305

00:51:21.825 --> 00:51:23.265 not normal. You don't lose

NOTE Confidence: 0.96889305

00:51:23.265 --> 00:51:24.300 that skill even if you

NOTE Confidence: 0.96889305

00:51:24.300 --> 00:51:26.160 have autism or intellectual disability.

NOTE Confidence: 0.9520597

00:51:27.180 --> 00:51:28.140 But that's what happens in

NOTE Confidence: 0.9520597

00:51:28.140 --> 00:51:29.980 clinical practices. People don't recognize

NOTE Confidence: 0.9520597

00:51:29.980 --> 00:51:30.480 this.

NOTE Confidence: 0.95669514

00:51:31.100 --> 00:51:32.219 And why it gets missed

NOTE Confidence: 0.95669514

00:51:32.219 --> 00:51:33.020 so that we have, you

NOTE Confidence: 0.95669514

00:51:33.020 --> 00:51:34.300 know, no self report that's

NOTE Confidence: 0.95669514

00:51:34.300 --> 00:51:36.000 kind of inherent to catatonia

NOTE Confidence: 0.95669514

00:51:36.219 --> 00:51:37.040 with the mutism.

NOTE Confidence: 0.98986816

00:51:38.145 --> 00:51:38.885 They overlap.

NOTE Confidence: 0.9982368

00:51:39.425 --> 00:51:40.545 We have no baseline to

NOTE Confidence: 0.9982368

00:51:40.545 --> 00:51:42.165 compare against. There's clinician

NOTE Confidence: 0.99902344

00:51:42.625 --> 00:51:43.125 unfamiliarity

NOTE Confidence: 0.76534015

00:51:44.465 --> 00:51:45.505 and kind of perhaps most

NOTE Confidence: 0.76534015

00:51:45.505 --> 00:51:46.005 commonly,

NOTE Confidence: 0.9489475

00:51:46.545 --> 00:51:47.905 it gets labeled as regression

NOTE Confidence: 0.9489475

00:51:47.905 --> 00:51:49.125 and it stops there.

NOTE Confidence: 0.9780649

00:51:49.745 --> 00:51:51.350 And I wanna draw a

NOTE Confidence: 0.9780649

00:51:51.350 --> 00:51:52.870 specific connection to this audience

NOTE Confidence: 0.9780649

00:51:52.870 --> 00:51:53.830 because I think many of

NOTE Confidence: 0.9780649

00:51:53.830 --> 00:51:55.030 you have seen this under

NOTE Confidence: 0.9780649

00:51:55.030 --> 00:51:57.210 a different name, childhood disintegrative

NOTE Confidence: 0.9780649

00:51:57.350 --> 00:51:57.850 disorder.

NOTE Confidence: 0.9447605

00:51:58.150 --> 00:52:00.150 So c d d, you

NOTE Confidence: 0.9447605

00:52:00.150 --> 00:52:01.850 know, part of DSM four,

NOTE Confidence: 0.9447605

00:52:02.070 --> 00:52:03.430 has been described for a

NOTE Confidence: 0.9447605

00:52:03.430 --> 00:52:04.710 long, long time at the

NOTE Confidence: 0.9447605

00:52:04.710 --> 00:52:05.850 Child Study Center,

NOTE Confidence: 0.92753094

00:52:06.974 --> 00:52:07.934 is a pattern where we

NOTE Confidence: 0.92753094

00:52:07.934 --> 00:52:09.295 see a child developing normally

NOTE Confidence: 0.92753094

00:52:09.295 --> 00:52:10.035 then losing

NOTE Confidence: 0.9560954

00:52:10.335 --> 00:52:12.174 language, social skills, and adaptive

NOTE Confidence: 0.9560954

00:52:12.174 --> 00:52:12.674 function,

NOTE Confidence: 0.9889323

00:52:13.055 --> 00:52:14.734 often dramatically over weeks to

NOTE Confidence: 0.9889323

00:52:14.734 --> 00:52:15.234 months.

NOTE Confidence: 0.9697599

00:52:16.174 --> 00:52:17.134 It kind of ended, and

NOTE Confidence: 0.9697599

00:52:17.134 --> 00:52:18.414 we stopped really following those

NOTE Confidence: 0.9697599

00:52:18.414 --> 00:52:19.580 kids back in two thousand

NOTE Confidence: 0.9697599

00:52:19.580 --> 00:52:20.540 thirteen with a switch to

NOTE Confidence: 0.9697599

00:52:20.540 --> 00:52:21.520 DSM five.

NOTE Confidence: 0.9704872

00:52:21.980 --> 00:52:23.420 But with work, you know,

NOTE Confidence: 0.9704872

00:52:23.420 --> 00:52:25.180 it's funny moving institutions and

NOTE Confidence: 0.9704872

00:52:25.180 --> 00:52:26.140 being like, oh, we're seeing

NOTE Confidence: 0.9704872

00:52:26.140 --> 00:52:27.020 the exact same thing, but

NOTE Confidence: 0.9704872

00:52:27.020 --> 00:52:28.140 we're calling it something really

NOTE Confidence: 0.9704872

00:52:28.140 --> 00:52:28.640 different.

NOTE Confidence: 0.99943036

00:52:29.420 --> 00:52:30.540 And we're treating it really

NOTE Confidence: 0.99943036

00:52:30.540 --> 00:52:31.040 differently.

NOTE Confidence: 0.97509766

00:52:31.825 --> 00:52:33.344 I'm working with, you know,

NOTE Confidence: 0.97509766

00:52:33.344 --> 00:52:35.125 Abba, Fred, and Lexi

NOTE Confidence: 0.980269

00:52:35.905 --> 00:52:37.665 to really validate that many

NOTE Confidence: 0.980269

00:52:37.665 --> 00:52:39.425 of these cases were likely

NOTE Confidence: 0.980269

00:52:39.425 --> 00:52:39.925 catatonia,

NOTE Confidence: 0.9621378

00:52:40.625 --> 00:52:42.785 unrecognized and untreated catatonia in

NOTE Confidence: 0.9621378

00:52:42.785 --> 00:52:43.825 a child who happened to

NOTE Confidence: 0.9621378

00:52:43.825 --> 00:52:44.945 have kind of an underlying

NOTE Confidence: 0.9621378

00:52:44.945 --> 00:52:45.445 neurodevelopmental

NOTE Confidence: 1

00:52:46.359 --> 00:52:46.859 condition

NOTE Confidence: 0.96668166

00:52:47.320 --> 00:52:49.239 that made the presentation somewhat

NOTE Confidence: 0.96668166

00:52:49.239 --> 00:52:50.839 atypical and the diagnosis easy

NOTE Confidence: 0.96668166

00:52:50.839 --> 00:52:51.420 to miss.

NOTE Confidence: 0.9878082

00:52:52.040 --> 00:52:53.239 And we're kind of going

NOTE Confidence: 0.9878082

00:52:53.239 --> 00:52:54.920 back forty years of videos

NOTE Confidence: 0.9878082

00:52:54.920 --> 00:52:56.599 and coding and validating that

NOTE Confidence: 0.9878082

00:52:56.599 --> 00:52:57.099 hypothesis.

NOTE Confidence: 0.9812899

00:52:58.295 --> 00:52:59.175 But we're seeing some of

NOTE Confidence: 0.9812899

00:52:59.175 --> 00:53:00.135 these kids, and they're coming

NOTE Confidence: 0.9812899

00:53:00.135 --> 00:53:01.415 to me. And we're able

NOTE Confidence: 0.9812899

00:53:01.415 --> 00:53:02.535 to get them quite a

NOTE Confidence: 0.9812899

00:53:02.535 --> 00:53:03.195 bit better,

NOTE Confidence: 0.99645996

00:53:03.735 --> 00:53:04.875 which is really incredible.

NOTE Confidence: 0.987264

00:53:09.895 --> 00:53:10.855 And I think, you know,

NOTE Confidence: 0.987264

00:53:10.855 --> 00:53:12.295 this is a prime example

NOTE Confidence: 0.987264

00:53:12.295 --> 00:53:13.035 of where

NOTE Confidence: 0.9994575

00:53:13.940 --> 00:53:15.540 not having structured data is

NOTE Confidence: 0.9994575

00:53:15.540 --> 00:53:16.680 a barrier to care.

NOTE Confidence: 0.9431966

00:53:18.340 --> 00:53:19.800 So in practice,

NOTE Confidence: 0.9911838

00:53:20.100 --> 00:53:21.380 when we don't have structured

NOTE Confidence: 0.9911838

00:53:21.380 --> 00:53:21.880 baselines,

NOTE Confidence: 0.9951172

00:53:22.740 --> 00:53:23.480 a patient

NOTE Confidence: 0.9844642

00:53:24.340 --> 00:53:26.660 presents with increasing rigidity, withdrawal,

NOTE Confidence: 0.9844642

00:53:26.660 --> 00:53:28.555 and refusal to eat. The

NOTE Confidence: 0.9844642

00:53:28.555 --> 00:53:29.755 question you need to answer

NOTE Confidence: 0.9844642

00:53:29.755 --> 00:53:30.715 is, is this new? Is

NOTE Confidence: 0.9844642

00:53:30.715 --> 00:53:31.835 this a change? Did something

NOTE Confidence: 0.9844642

00:53:31.835 --> 00:53:32.715 shift? But you have no

NOTE Confidence: 0.9844642

00:53:32.715 --> 00:53:33.215 data.

NOTE Confidence: 0.98047686

00:53:33.515 --> 00:53:35.594 Catatonia is diagnosed by detecting

NOTE Confidence: 0.98047686

00:53:35.594 --> 00:53:37.135 change against a prior baseline.

NOTE Confidence: 0.99331665

00:53:37.435 --> 00:53:38.475 And if there's no baseline,

NOTE Confidence: 0.99331665

00:53:38.475 --> 00:53:39.375 there's no anger.

NOTE Confidence: 0.97577477

00:53:39.675 --> 00:53:41.035 You can't distinguish an acute

NOTE Confidence: 0.97577477

00:53:41.035 --> 00:53:42.715 catatonic process from a gradual

NOTE Confidence: 0.97577477

00:53:42.715 --> 00:53:44.589 functional decline. And the true

NOTE Confidence: 0.97577477

00:53:44.589 --> 00:53:45.569 trajectory is, in a very

NOTE Confidence: 0.97577477

00:53:45.569 --> 00:53:47.029 real sense, unknown to you.

NOTE Confidence: 0.9743103

00:53:47.809 --> 00:53:49.969 With repeated structures, assessments, that

NOTE Confidence: 0.9743103

00:53:49.969 --> 00:53:51.569 changes entirely. You have a

NOTE Confidence: 0.9743103

00:53:51.569 --> 00:53:53.089 longitudinal record. You can see

NOTE Confidence: 0.9743103

00:53:53.089 --> 00:53:54.369 where the line bent. You

NOTE Confidence: 0.9743103

00:53:54.369 --> 00:53:55.569 can see the inflection point,

NOTE Confidence: 0.9743103

00:53:55.569 --> 00:53:56.849 the visit where scores dropped,

NOTE Confidence: 0.9743103

00:53:56.849 --> 00:53:58.289 where function changed, where something

NOTE Confidence: 0.9743103

00:53:58.289 --> 00:54:00.069 clearly shifted from this patient's

NOTE Confidence: 0.96362305

00:54:00.585 --> 00:54:01.805 own prior state,

NOTE Confidence: 0.97839355

00:54:02.185 --> 00:54:04.344 motor behavior, activity level, functional

NOTE Confidence: 0.97839355

00:54:04.344 --> 00:54:05.965 engagement, the measure that captures

NOTE Confidence: 0.91485256

00:54:06.425 --> 00:54:08.425 what catty catatonia produces are

NOTE Confidence: 0.91485256

00:54:08.425 --> 00:54:09.864 in the record at every

NOTE Confidence: 0.91485256

00:54:09.864 --> 00:54:10.685 prior visit.

NOTE Confidence: 0.9834595

00:54:11.145 --> 00:54:12.344 We see when they're losing

NOTE Confidence: 0.9834595

00:54:12.344 --> 00:54:13.565 these adaptive skills,

NOTE Confidence: 0.9904785

00:54:14.665 --> 00:54:15.484 because we

NOTE Confidence: 0.9889788

00:54:16.040 --> 00:54:17.400 have the infrastructure able to

NOTE Confidence: 0.9889788

00:54:17.400 --> 00:54:18.140 capture it.

NOTE Confidence: 0.9623736

00:54:21.719 --> 00:54:23.640 We often see huge delays

NOTE Confidence: 0.9623736

00:54:23.640 --> 00:54:25.180 in treatment because of this,

NOTE Confidence: 0.9623736

00:54:25.320 --> 00:54:27.000 often averaging well over two

NOTE Confidence: 0.9623736

00:54:27.000 --> 00:54:27.820 hundred days.

NOTE Confidence: 0.9641113

00:54:28.785 --> 00:54:31.184 And, ultimately, timely treatment leads

NOTE Confidence: 0.9641113

00:54:31.184 --> 00:54:32.704 to better prognosis for all

NOTE Confidence: 0.9641113

00:54:32.704 --> 00:54:33.444 these kids.

NOTE Confidence: 0.96000403

00:54:35.984 --> 00:54:37.105 And I wanna talk about

NOTE Confidence: 0.96000403

00:54:37.105 --> 00:54:38.625 where this brings us. Because

NOTE Confidence: 0.96000403

00:54:38.625 --> 00:54:39.505 some of you are thinking

NOTE Confidence: 0.96000403

00:54:39.505 --> 00:54:40.325 about research.

NOTE Confidence: 0.964798

00:54:41.250 --> 00:54:41.969 Some of you are thinking

NOTE Confidence: 0.964798

00:54:41.969 --> 00:54:43.190 about clinical encounters.

NOTE Confidence: 0.9972331

00:54:43.650 --> 00:54:44.550 And, you know,

NOTE Confidence: 0.9989421

00:54:44.850 --> 00:54:46.530 the implications extend well beyond

NOTE Confidence: 0.9989421

00:54:46.530 --> 00:54:47.030 catatonia.

NOTE Confidence: 0.98498535

00:54:47.489 --> 00:54:48.610 So the core asset is

NOTE Confidence: 0.98498535

00:54:48.610 --> 00:54:50.450 this longitudinal structured data from

NOTE Confidence: 0.98498535

00:54:50.450 --> 00:54:51.190 every patient

NOTE Confidence: 0.9968533

00:54:51.650 --> 00:54:52.469 in a neurodevelopmental

NOTE Confidence: 0.9776001

00:54:52.850 --> 00:54:54.450 disabilities clinic captured at every

NOTE Confidence: 0.9776001

00:54:54.450 --> 00:54:55.510 visit over time.

NOTE Confidence: 0.99741906

00:54:55.925 --> 00:54:56.885 So what does that make

NOTE Confidence: 0.99741906

00:54:56.885 --> 00:54:58.105 possible? So

NOTE Confidence: 0.9754778

00:54:58.405 --> 00:55:00.405 two things immediately. First, natural

NOTE Confidence: 0.9754778

00:55:00.405 --> 00:55:02.105 history studies and rare diseases.

NOTE Confidence: 0.9754778

00:55:02.325 --> 00:55:03.685 So for conditions like Phelan

NOTE Confidence: 0.9754778

00:55:03.685 --> 00:55:05.445 McDermid or SYNGAP1, there are

NOTE Confidence: 0.9754778

00:55:05.445 --> 00:55:06.805 no registries that capture the

NOTE Confidence: 0.9754778

00:55:06.805 --> 00:55:08.025 full clinical phenotype

NOTE Confidence: 0.901001

00:55:08.405 --> 00:55:09.945 and certainly not longitudinally.

NOTE Confidence: 0.9838867

00:55:11.469 --> 00:55:12.290 Patient advocacy

NOTE Confidence: 0.9843782

00:55:12.670 --> 00:55:13.630 groups have done a really

NOTE Confidence: 0.9843782

00:55:13.630 --> 00:55:14.910 good job of doing that,

NOTE Confidence: 0.9843782

00:55:14.910 --> 00:55:16.190 but it's burdensome. And these

NOTE Confidence: 0.9843782

00:55:16.190 --> 00:55:17.070 are kids who are ending

NOTE Confidence: 0.9843782

00:55:17.070 --> 00:55:18.610 up in doctor's offices anyway.

NOTE Confidence: 0.9787133

00:55:18.910 --> 00:55:20.030 So measurement based care in

NOTE Confidence: 0.9787133

00:55:20.030 --> 00:55:22.190 the EHR does without requiring

NOTE Confidence: 0.9787133

00:55:22.190 --> 00:55:23.805 separate enrollment, without excluding the

NOTE Confidence: 0.9787133

00:55:23.805 --> 00:55:25.565 most severely affected patients, and

NOTE Confidence: 0.9787133

00:55:25.565 --> 00:55:26.065 without

NOTE Confidence: 0.9835069

00:55:26.364 --> 00:55:28.685 ascertainment bias that plagues every

NOTE Confidence: 0.9835069

00:55:28.685 --> 00:55:29.984 opt in research registry.

NOTE Confidence: 0.9749645

00:55:30.685 --> 00:55:32.224 Second, we have the possibility

NOTE Confidence: 0.9749645

00:55:32.285 --> 00:55:33.165 for n of one and

NOTE Confidence: 0.9749645

00:55:33.165 --> 00:55:35.085 single subject study designs. So

NOTE Confidence: 0.9749645

00:55:35.085 --> 00:55:36.204 when every patient has their

NOTE Confidence: 0.9749645

00:55:36.204 --> 00:55:36.864 own longitudinal

NOTE Confidence: 0.9995117

00:55:37.165 --> 00:55:37.665 control,

NOTE Confidence: 0.97164553

00:55:38.040 --> 00:55:39.900 you can study individual trajectories

NOTE Confidence: 0.97164553

00:55:39.960 --> 00:55:41.480 in ways that population level

NOTE Confidence: 0.97164553

00:55:41.480 --> 00:55:43.239 RCTs cannot. You can detect

NOTE Confidence: 0.97164553

00:55:43.239 --> 00:55:45.500 progression, recovery, and medication responses,

NOTE Confidence: 0.97164553

00:55:45.560 --> 00:55:46.700 the level of the individual,

NOTE Confidence: 0.9995931

00:55:47.080 --> 00:55:48.440 which is exactly what clinicians

NOTE Confidence: 0.9995931

00:55:48.440 --> 00:55:49.560 need and what families are

NOTE Confidence: 0.9995931

00:55:49.560 --> 00:55:50.380 asking for.

NOTE Confidence: 1

00:55:51.234 --> 00:55:51.734 And

NOTE Confidence: 0.9851997

00:55:52.275 --> 00:55:53.635 then two more downstream is

NOTE Confidence: 0.9851997

00:55:53.635 --> 00:55:55.175 really thinking about trial readiness.

NOTE Confidence: 0.9851997

00:55:55.474 --> 00:55:57.395 When the clinic population is

NOTE Confidence: 0.9851997

00:55:57.395 --> 00:55:58.994 already phenotyped and your outcome

NOTE Confidence: 0.9851997

00:55:58.994 --> 00:56:00.515 measures are already validated in

NOTE Confidence: 0.9851997

00:56:00.515 --> 00:56:02.135 the context of routine care,

NOTE Confidence: 0.9963786

00:56:02.435 --> 00:56:03.670 you can run trials faster

NOTE Confidence: 0.9963786

00:56:03.670 --> 00:56:05.610 with populations that actually represent

NOTE Confidence: 0.9963786

00:56:05.910 --> 00:56:06.570 the patients

NOTE Confidence: 0.96275747

00:56:06.870 --> 00:56:08.070 the intervention is meant to

NOTE Confidence: 0.96275747

00:56:08.070 --> 00:56:09.910 help. The infrastructure does the

NOTE Confidence: 0.96275747

00:56:09.910 --> 00:56:10.410 legwork

NOTE Confidence: 0.92978925

00:56:10.710 --> 00:56:12.630 that enrollment and characterization normally

NOTE Confidence: 0.92978925

00:56:12.630 --> 00:56:13.130 require.

NOTE Confidence: 0.97506106

00:56:13.510 --> 00:56:15.450 And biomarker development, so longitudinal

NOTE Confidence: 0.97506106

00:56:15.670 --> 00:56:17.535 functional data at scale creates

NOTE Confidence: 0.97506106

00:56:17.535 --> 00:56:19.775 the opportunity to identify functional

NOTE Confidence: 0.97506106

00:56:19.775 --> 00:56:21.795 correlates of genetic diagnosis, candidate

NOTE Confidence: 0.7052002

00:56:22.335 --> 00:56:23.315 behavioral endpoints

NOTE Confidence: 0.9847412

00:56:23.775 --> 00:56:25.775 for early intervention trials before

NOTE Confidence: 0.9847412

00:56:25.775 --> 00:56:27.214 we have the biological measures

NOTE Confidence: 0.9847412

00:56:27.214 --> 00:56:27.875 in place.

NOTE Confidence: 0.985919

00:56:29.700 --> 00:56:31.380 And every clinical encounter becomes

NOTE Confidence: 0.985919

00:56:31.380 --> 00:56:32.980 a research data point without

NOTE Confidence: 0.985919

00:56:32.980 --> 00:56:34.260 excluding the patients who need

NOTE Confidence: 0.985919

00:56:34.260 --> 00:56:36.040 it most. The same infrastructure

NOTE Confidence: 0.985919

00:56:36.180 --> 00:56:37.860 that catches a catatonic episode

NOTE Confidence: 0.985919

00:56:37.860 --> 00:56:39.080 in clinic is the infrastructure

NOTE Confidence: 0.985919

00:56:39.140 --> 00:56:40.520 that makes the science possible.

NOTE Confidence: 0.9979474

00:56:41.505 --> 00:56:42.625 That's what we're building. The

NOTE Confidence: 0.9979474

00:56:42.625 --> 00:56:43.825 data we don't have isn't

NOTE Confidence: 0.9979474

00:56:43.825 --> 00:56:45.424 missing by accident. It's missing

NOTE Confidence: 0.9979474

00:56:45.424 --> 00:56:46.864 because the infrastructure to capture

NOTE Confidence: 0.9979474

00:56:46.864 --> 00:56:48.065 it has never been made

NOTE Confidence: 0.9979474

00:56:48.065 --> 00:56:48.884 a priority.

NOTE Confidence: 0.9238281

00:56:49.664 --> 00:56:51.204 Thank you. Happy to answer

NOTE Confidence: 0.9238281

00:56:51.424 --> 00:56:52.164 any questions.

NOTE Confidence: 0.9530145

00:56:59.839 --> 00:57:00.640 Maybe just while people are

NOTE Confidence: 0.9530145

00:57:00.640 --> 00:57:01.680 collecting their thoughts, I know

NOTE Confidence: 0.9530145

00:57:01.680 --> 00:57:02.799 you have an excellent colleague

NOTE Confidence: 0.9530145

00:57:02.799 --> 00:57:03.920 at Boston Children's to think

NOTE Confidence: 0.9530145

00:57:03.920 --> 00:57:05.119 about this with Mark Mercurio,

NOTE Confidence: 0.9530145

00:57:05.119 --> 00:57:06.160 but can you talk us

NOTE Confidence: 0.9530145

00:57:06.160 --> 00:57:08.079 through your thoughts about the

NOTE Confidence: 0.9530145

00:57:08.079 --> 00:57:09.059 consent process

NOTE Confidence: 0.9850098

00:57:09.654 --> 00:57:10.934 for families entering into this?

NOTE Confidence: 0.9850098

00:57:10.934 --> 00:57:11.894 Will it be opt in?

NOTE Confidence: 0.9850098

00:57:11.894 --> 00:57:13.035 Will it be opt out?

NOTE Confidence: 0.93339723

00:57:13.494 --> 00:57:14.934 And potentially how you will

NOTE Confidence: 0.93339723

00:57:14.934 --> 00:57:16.634 link that into biological sampling.

NOTE Confidence: 0.93339723

00:57:16.855 --> 00:57:17.974 So I think it's really

NOTE Confidence: 0.93339723

00:57:17.974 --> 00:57:19.255 interesting, and it's something that

NOTE Confidence: 0.93339723

00:57:19.255 --> 00:57:20.214 we're giving a lot of

NOTE Confidence: 0.93339723

00:57:20.214 --> 00:57:21.510 thought to, and I spend

NOTE Confidence: 0.93339723

00:57:21.510 --> 00:57:21.670 a lot of time talking

NOTE Confidence: 0.93339723

00:57:21.670 --> 00:57:23.430 to Mark and the IRB

NOTE Confidence: 0.93339723

00:57:23.430 --> 00:57:23.930 about.

NOTE Confidence: 0.94985354

00:57:24.870 --> 00:57:26.250 So I think it's important,

NOTE Confidence: 0.9954427

00:57:26.870 --> 00:57:27.850 and I think

NOTE Confidence: 0.9343959

00:57:28.950 --> 00:57:30.070 one thing to acknowledge is

NOTE Confidence: 0.9343959

00:57:30.070 --> 00:57:31.210 that, generally,

NOTE Confidence: 1

00:57:32.070 --> 00:57:33.370 all of our health records

NOTE Confidence: 0.9667969

00:57:34.390 --> 00:57:34.890 are

NOTE Confidence: 0.996875

00:57:36.015 --> 00:57:37.795 opt out for research purposes.

NOTE Confidence: 0.996875

00:57:38.015 --> 00:57:39.474 So everything that is collected

NOTE Confidence: 0.9343262

00:57:39.775 --> 00:57:40.515 by default

NOTE Confidence: 0.97927374

00:57:40.974 --> 00:57:42.255 is eligible for research. I

NOTE Confidence: 0.97927374

00:57:42.255 --> 00:57:43.775 think the question becomes, what

NOTE Confidence: 0.97927374

00:57:43.775 --> 00:57:44.575 are we doing and what

NOTE Confidence: 0.97927374

00:57:44.575 --> 00:57:45.795 is standard of care?

NOTE Confidence: 0.99527997

00:57:46.095 --> 00:57:48.095 Because every doctor's appointment, someone

NOTE Confidence: 0.99527997

00:57:48.095 --> 00:57:49.135 can go in and, you

NOTE Confidence: 0.99527997

00:57:49.135 --> 00:57:50.674 know, pull it and say,

NOTE Confidence: 0.9995117

00:57:50.980 --> 00:57:53.000 I wanna, you know, see

NOTE Confidence: 0.9831814

00:57:53.540 --> 00:57:54.420 a bunch of thirty year

NOTE Confidence: 0.9831814

00:57:54.420 --> 00:57:55.700 olds and, like, what happens

NOTE Confidence: 0.9831814

00:57:55.700 --> 00:57:57.060 to them when we tell

NOTE Confidence: 0.9831814

00:57:57.060 --> 00:57:57.960 them to exercise.

NOTE Confidence: 0.98939735

00:57:58.660 --> 00:58:00.340 That is already happening whether

NOTE Confidence: 0.98939735

00:58:00.340 --> 00:58:01.620 or not people know it.

NOTE Confidence: 0.98939735

00:58:01.620 --> 00:58:03.080 What we've been really intentional

NOTE Confidence: 0.98939735

00:58:03.220 --> 00:58:04.500 about is wanting to think

NOTE Confidence: 0.98939735

00:58:04.500 --> 00:58:05.000 about

NOTE Confidence: 0.9808553

00:58:06.945 --> 00:58:08.225 what is the additional burden

NOTE Confidence: 0.9808553

00:58:08.225 --> 00:58:09.825 to these families and what

NOTE Confidence: 0.9808553

00:58:09.825 --> 00:58:10.725 is useful.

NOTE Confidence: 0.9995117

00:58:11.025 --> 00:58:11.685 I think

NOTE Confidence: 0.9833264

00:58:12.065 --> 00:58:13.185 the idea is that this

NOTE Confidence: 0.9833264

00:58:13.185 --> 00:58:14.545 should be less burdensome. And

NOTE Confidence: 0.9833264

00:58:14.545 --> 00:58:15.905 when we've worked with community

NOTE Confidence: 0.9833264

00:58:15.905 --> 00:58:17.905 advisory boards to really kind

NOTE Confidence: 0.9833264

00:58:17.905 --> 00:58:19.205 of ask them, you know,

NOTE Confidence: 0.9833264

00:58:19.425 --> 00:58:19.925 what

NOTE Confidence: 0.9993239

00:58:20.619 --> 00:58:21.580 what do you think about

NOTE Confidence: 0.9993239

00:58:21.580 --> 00:58:22.300 this? What do you think

NOTE Confidence: 0.9993239

00:58:22.300 --> 00:58:23.280 about this process?

NOTE Confidence: 0.9986572

00:58:23.660 --> 00:58:25.599 They've overwhelmingly been enthusiastic

NOTE Confidence: 0.96308595

00:58:26.060 --> 00:58:27.760 because they're like, I really,

NOTE Confidence: 0.97731173

00:58:29.339 --> 00:58:30.540 you know, wanna partner in

NOTE Confidence: 0.97731173

00:58:30.540 --> 00:58:31.660 this. And I think it's

NOTE Confidence: 0.97731173

00:58:31.660 --> 00:58:33.505 important to acknowledge the population

NOTE Confidence: 0.97731173

00:58:33.505 --> 00:58:34.705 that we're talking about is

NOTE Confidence: 0.97731173

00:58:34.705 --> 00:58:36.465 mostly those with pretty profound

NOTE Confidence: 0.97731173

00:58:36.465 --> 00:58:38.244 disabilities and intellectual disability

NOTE Confidence: 0.98982745

00:58:38.705 --> 00:58:39.845 and genetic syndromes.

NOTE Confidence: 0.9995117

00:58:40.385 --> 00:58:41.205 It's less

NOTE Confidence: 0.9825917

00:58:41.585 --> 00:58:43.105 kind of broader psychiatry, which

NOTE Confidence: 0.9825917

00:58:43.105 --> 00:58:45.125 I think slightly sways it.

NOTE Confidence: 0.9825917

00:58:45.265 --> 00:58:46.065 But I think the other

NOTE Confidence: 0.9825917

00:58:46.065 --> 00:58:47.105 thing that we've thought a

NOTE Confidence: 0.9825917

00:58:47.105 --> 00:58:48.165 lot about is

NOTE Confidence: 0.99108887

00:58:49.960 --> 00:58:51.020 kind of data availability,

NOTE Confidence: 0.9538233

00:58:52.040 --> 00:58:53.400 data sharing, because the broad

NOTE Confidence: 0.9538233

00:58:53.400 --> 00:58:54.920 goal is that, like, I'm

NOTE Confidence: 0.9538233

00:58:54.920 --> 00:58:56.360 working with collaborators at different

NOTE Confidence: 0.9538233

00:58:56.360 --> 00:58:57.820 sites to think about harmonization

NOTE Confidence: 0.9538233

00:58:57.960 --> 00:58:59.000 that, like, because we're in

NOTE Confidence: 0.9538233

00:58:59.000 --> 00:59:00.280 Epic, we can use the

NOTE Confidence: 0.9538233

00:59:00.280 --> 00:59:01.400 same flow sheets that someone

NOTE Confidence: 0.9538233

00:59:01.400 --> 00:59:02.680 at Texas Children's or at

NOTE Confidence: 0.9538233

00:59:02.680 --> 00:59:03.660 CHOP is using.

NOTE Confidence: 0.93885094

00:59:03.995 --> 00:59:05.435 And ultimately, for these super

NOTE Confidence: 0.93885094

00:59:05.435 --> 00:59:07.115 rare samples, harmonize our data

NOTE Confidence: 0.93885094

00:59:07.115 --> 00:59:08.415 to think about getting meaningful

NOTE Confidence: 0.99316406

00:59:08.715 --> 00:59:09.695 sample sizes.

NOTE Confidence: 0.9970117

00:59:10.395 --> 00:59:11.835 But I think that raises

NOTE Confidence: 0.9970117

00:59:11.835 --> 00:59:13.595 other ethical questions that we're

NOTE Confidence: 0.9970117

00:59:13.595 --> 00:59:15.035 kind of sorting through. And

NOTE Confidence: 0.9970117

00:59:15.035 --> 00:59:16.075 one thing that I'm working

NOTE Confidence: 0.9970117

00:59:16.075 --> 00:59:17.615 with some colleagues on is

NOTE Confidence: 0.99902344

00:59:17.995 --> 00:59:19.055 developing a

NOTE Confidence: 0.99921125

00:59:19.420 --> 00:59:20.860 questionnaire for these families. I

NOTE Confidence: 0.99921125

00:59:20.860 --> 00:59:22.240 think we've had really interesting

NOTE Confidence: 0.99921125

00:59:22.460 --> 00:59:24.080 infrastructure discussions about

NOTE Confidence: 0.9993257

00:59:24.540 --> 00:59:25.980 data sharing more broadly with

NOTE Confidence: 0.9993257

00:59:25.980 --> 00:59:27.120 phenotypic data.

NOTE Confidence: 0.8232422

00:59:29.100 --> 00:59:29.760 Some people

NOTE Confidence: 0.99790037

00:59:30.300 --> 00:59:31.740 are very opposed to it,

NOTE Confidence: 0.9862671

00:59:32.140 --> 00:59:33.260 in terms of kind of

NOTE Confidence: 0.9862671

00:59:33.260 --> 00:59:34.480 researchers and PIs.

NOTE Confidence: 0.9991455

00:59:35.685 --> 00:59:37.125 My sense from working with

NOTE Confidence: 0.9991455

00:59:37.125 --> 00:59:38.245 families is that's not how

NOTE Confidence: 0.9991455

00:59:38.245 --> 00:59:38.985 they feel.

NOTE Confidence: 0.99800247

00:59:39.285 --> 00:59:40.645 People are not contributing to

NOTE Confidence: 0.99800247

00:59:40.645 --> 00:59:42.405 individual sciences because they care

NOTE Confidence: 0.99800247

00:59:42.405 --> 00:59:42.905 about

NOTE Confidence: 0.99869794

00:59:43.605 --> 00:59:44.905 a professor's promotion.

NOTE Confidence: 0.98432076

00:59:45.205 --> 00:59:46.485 They don't care about tenure

NOTE Confidence: 0.98432076

00:59:46.485 --> 00:59:48.165 track. They care about answers

NOTE Confidence: 0.98432076

00:59:48.165 --> 00:59:49.530 for their kids. And I

NOTE Confidence: 0.98432076

00:59:49.530 --> 00:59:50.750 think most families,

NOTE Confidence: 0.99934894

00:59:51.930 --> 00:59:52.430 anecdotally,

NOTE Confidence: 0.9902782

00:59:54.490 --> 00:59:55.850 feel similarly about that. So

NOTE Confidence: 0.9902782

00:59:55.850 --> 00:59:56.970 we're trying to validate that

NOTE Confidence: 0.9902782

00:59:56.970 --> 00:59:58.190 through some questionnaires.

NOTE Confidence: 0.9995117

00:59:58.650 --> 01:00:00.010 But I think our goal

NOTE Confidence: 0.9995117

01:00:00.010 --> 01:00:00.510 is

NOTE Confidence: 0.99591935

01:00:01.145 --> 01:00:02.345 really to have this be

NOTE Confidence: 0.99591935

01:00:02.345 --> 01:00:03.224 kind of an opt out

NOTE Confidence: 0.99591935

01:00:03.224 --> 01:00:04.925 process and include everyone.

NOTE Confidence: 0.95388794

01:00:14.750 --> 01:00:16.369 Hey, Max. This is great.

NOTE Confidence: 0.95388794

01:00:16.590 --> 01:00:17.470 And I think that what

NOTE Confidence: 0.95388794

01:00:17.470 --> 01:00:18.510 you have shown us is

NOTE Confidence: 0.95388794

01:00:18.510 --> 01:00:19.869 the X-ray of your next

NOTE Confidence: 0.95388794

01:00:19.869 --> 01:00:21.330 forty years of work

NOTE Confidence: 0.7182617

01:00:21.710 --> 01:00:22.210 because

NOTE Confidence: 0.97529453

01:00:22.750 --> 01:00:23.869 that's how long I think

NOTE Confidence: 0.97529453

01:00:23.869 --> 01:00:24.750 it's gonna take, but it's

NOTE Confidence: 0.97529453

01:00:24.750 --> 01:00:25.630 gonna be worth it. And

NOTE Confidence: 0.97529453

01:00:25.630 --> 01:00:26.430 if someone can do it,

NOTE Confidence: 0.97529453

01:00:26.430 --> 01:00:27.505 you can do it. And

NOTE Confidence: 0.97529453

01:00:27.505 --> 01:00:28.224 I think that you can

NOTE Confidence: 0.97529453

01:00:28.305 --> 01:00:29.265 If someone's stupid enough to

NOTE Confidence: 0.97529453

01:00:29.265 --> 01:00:30.224 do it, it's me. You're

NOTE Confidence: 0.97529453

01:00:30.224 --> 01:00:31.425 you're stupid enough. You're stupid

NOTE Confidence: 0.97529453

01:00:31.425 --> 01:00:33.505 enough. And, you know, to

NOTE Confidence: 0.97529453

01:00:33.505 --> 01:00:35.025 start it, there couldn't be

NOTE Confidence: 0.97529453

01:00:35.025 --> 01:00:36.545 a better place, in support

NOTE Confidence: 0.97529453

01:00:36.545 --> 01:00:37.205 than Boston,

NOTE Confidence: 0.9644646

01:00:38.145 --> 01:00:39.540 Children's. But then I can

NOTE Confidence: 0.9644646

01:00:39.540 --> 01:00:40.500 see this. This has been

NOTE Confidence: 0.9644646

01:00:40.500 --> 01:00:41.700 a dream floating around in

NOTE Confidence: 0.9644646

01:00:41.700 --> 01:00:43.220 the American Academy, the John

NOTE Confidence: 0.9644646

01:00:43.220 --> 01:00:45.380 March, before your time, already

NOTE Confidence: 0.9644646

01:00:45.380 --> 01:00:46.580 talked about. But I think

NOTE Confidence: 0.9644646

01:00:46.580 --> 01:00:47.140 that you can do it.

NOTE Confidence: 0.9644646

01:00:47.140 --> 01:00:48.340 You're young enough, and I

NOTE Confidence: 0.9644646

01:00:48.340 --> 01:00:49.480 think that that's great.

NOTE Confidence: 0.9963867

01:00:49.940 --> 01:00:51.480 My question or my concern

NOTE Confidence: 0.95237136

01:00:52.035 --> 01:00:52.994 is that I think that

NOTE Confidence: 0.95237136

01:00:52.994 --> 01:00:53.875 Epic can do all these

NOTE Confidence: 0.95237136

01:00:53.875 --> 01:00:55.395 beautiful things. I I I

NOTE Confidence: 0.95237136

01:00:55.395 --> 01:00:56.835 can see all this, techno

NOTE Confidence: 0.95237136

01:00:56.835 --> 01:00:58.295 wizardry happening, but

NOTE Confidence: 0.99902344

01:00:58.915 --> 01:01:00.535 our measures are really bad.

NOTE Confidence: 0.981942

01:01:01.395 --> 01:01:02.915 So are you gonna develop

NOTE Confidence: 0.981942

01:01:02.915 --> 01:01:04.035 the next forty years of

NOTE Confidence: 0.981942

01:01:04.035 --> 01:01:05.155 your career to develop good

NOTE Confidence: 0.981942

01:01:05.155 --> 01:01:06.460 measures? Or how how are

NOTE Confidence: 0.981942

01:01:06.460 --> 01:01:07.500 you gonna kidding aside, how

NOTE Confidence: 0.981942

01:01:07.500 --> 01:01:08.540 are you gonna reconcile the

NOTE Confidence: 0.981942

01:01:08.540 --> 01:01:09.980 badness of our measures with

NOTE Confidence: 0.981942

01:01:09.980 --> 01:01:11.180 the task at hand? So

NOTE Confidence: 0.981942

01:01:11.180 --> 01:01:12.700 I think that's where population

NOTE Confidence: 0.981942

01:01:12.700 --> 01:01:14.300 becomes really important. So I

NOTE Confidence: 0.981942

01:01:14.300 --> 01:01:15.980 think you're right. Our measures

NOTE Confidence: 0.981942

01:01:15.980 --> 01:01:16.880 are really bad.

NOTE Confidence: 0.9873291

01:01:17.900 --> 01:01:19.420 I anticipated this question as

NOTE Confidence: 0.9873291

01:01:19.420 --> 01:01:20.800 I was driving down, and

NOTE Confidence: 0.99869794

01:01:21.155 --> 01:01:22.055 I think the

NOTE Confidence: 0.96958643

01:01:22.955 --> 01:01:24.994 you know, we have bad

NOTE Confidence: 0.96958643

01:01:24.994 --> 01:01:26.755 measures. They're not perfect. I

NOTE Confidence: 0.96958643

01:01:26.755 --> 01:01:27.635 think some of it, you

NOTE Confidence: 0.96958643

01:01:27.635 --> 01:01:28.915 know, as Lacy talked about,

NOTE Confidence: 0.96958643

01:01:28.915 --> 01:01:30.595 is really thinking about how

NOTE Confidence: 0.96958643

01:01:30.595 --> 01:01:31.474 do we get to, like,

NOTE Confidence: 0.96958643

01:01:31.474 --> 01:01:32.355 what the crux of what

NOTE Confidence: 0.96958643

01:01:32.355 --> 01:01:33.440 we're measuring is. And I

NOTE Confidence: 0.96958643

01:01:33.440 --> 01:01:34.400 think some of that is

NOTE Confidence: 0.96958643

01:01:34.400 --> 01:01:35.600 using all sorts of measurements

NOTE Confidence: 0.96958643

01:01:35.600 --> 01:01:36.660 and seeing what exists.

NOTE Confidence: 0.96464187

01:01:37.040 --> 01:01:38.400 I also think, you know,

NOTE Confidence: 0.96464187

01:01:38.400 --> 01:01:39.600 if I give someone a

NOTE Confidence: 0.96464187

01:01:39.600 --> 01:01:41.200 ruler that's, like, kinda messed

NOTE Confidence: 0.96464187

01:01:41.200 --> 01:01:42.400 up and, like, you know,

NOTE Confidence: 0.96464187

01:01:42.400 --> 01:01:43.520 someone slips when they were

NOTE Confidence: 0.96464187

01:01:43.520 --> 01:01:44.340 printing it,

NOTE Confidence: 0.9940019

01:01:44.640 --> 01:01:46.000 and everyone uses the same

NOTE Confidence: 0.9940019

01:01:46.000 --> 01:01:47.280 ruler that's kinda messed up

NOTE Confidence: 0.9940019

01:01:47.280 --> 01:01:48.560 and, like, the inches aren't

NOTE Confidence: 0.9940019

01:01:48.560 --> 01:01:49.974 lined up, and I tell

NOTE Confidence: 0.9940019

01:01:49.974 --> 01:01:51.095 them to measure the chair,

NOTE Confidence: 0.9940019

01:01:51.095 --> 01:01:52.055 we come up with the

NOTE Confidence: 0.9940019

01:01:52.055 --> 01:01:53.415 same thing. But if I

NOTE Confidence: 0.9940019

01:01:53.415 --> 01:01:54.615 ask everyone to eyeball how

NOTE Confidence: 0.9940019

01:01:54.615 --> 01:01:55.755 big that chair is,

NOTE Confidence: 0.95555675

01:01:56.375 --> 01:01:57.575 we get things that are

NOTE Confidence: 0.95555675

01:01:57.575 --> 01:01:58.695 very different that I think

NOTE Confidence: 0.95555675

01:01:58.695 --> 01:01:59.974 even with the imprecision of

NOTE Confidence: 0.95555675

01:01:59.974 --> 01:02:00.795 our measurements,

NOTE Confidence: 0.9970703

01:02:01.734 --> 01:02:02.635 I think having

NOTE Confidence: 0.9973958

01:02:03.300 --> 01:02:04.980 unified measurements gets us somewhere

NOTE Confidence: 0.9973958

01:02:04.980 --> 01:02:06.020 that we're not right now

NOTE Confidence: 0.9973958

01:02:06.020 --> 01:02:06.760 in psychiatry.

NOTE Confidence: 0.9640991

01:02:07.380 --> 01:02:08.500 I think the other piece,

NOTE Confidence: 0.9640991

01:02:08.500 --> 01:02:09.940 though, is being really specific

NOTE Confidence: 0.9640991

01:02:09.940 --> 01:02:11.220 about our population. So really

NOTE Confidence: 0.9640991

01:02:11.220 --> 01:02:13.160 narrowing down on intellectual disability

NOTE Confidence: 0.9956942

01:02:13.700 --> 01:02:15.380 and thinking about what measures

NOTE Confidence: 0.9956942

01:02:15.380 --> 01:02:16.900 are validated just in this

NOTE Confidence: 0.9956942

01:02:16.900 --> 01:02:17.400 population

NOTE Confidence: 0.98132455

01:02:18.215 --> 01:02:19.575 and just focusing there, and

NOTE Confidence: 0.98132455

01:02:19.575 --> 01:02:20.695 that's kinda why I'm starting

NOTE Confidence: 0.98132455

01:02:20.695 --> 01:02:21.815 there. I think we can

NOTE Confidence: 0.98132455

01:02:21.815 --> 01:02:23.435 think about, you know, PHQs

NOTE Confidence: 0.98132455

01:02:23.495 --> 01:02:24.635 and all sorts of stuff.

NOTE Confidence: 0.98132455

01:02:24.775 --> 01:02:26.055 I am not gonna ask

NOTE Confidence: 0.98132455

01:02:26.055 --> 01:02:26.555 parents

NOTE Confidence: 0.990332

01:02:27.015 --> 01:02:28.395 of kids who have no

NOTE Confidence: 0.9995117

01:02:28.775 --> 01:02:29.835 functional language

NOTE Confidence: 0.9547119

01:02:30.940 --> 01:02:32.720 PHQ questions. It's insulting.

NOTE Confidence: 0.99244523

01:02:33.820 --> 01:02:34.780 And I think, you know,

NOTE Confidence: 0.99244523

01:02:34.780 --> 01:02:36.140 that's I think where we

NOTE Confidence: 0.99244523

01:02:36.140 --> 01:02:37.840 start is really breaking down

NOTE Confidence: 0.99244523

01:02:37.980 --> 01:02:38.960 in terms of

NOTE Confidence: 0.9800692

01:02:39.500 --> 01:02:40.620 who is our population and

NOTE Confidence: 0.9800692

01:02:40.620 --> 01:02:41.340 what are we trying to

NOTE Confidence: 0.9800692

01:02:41.340 --> 01:02:41.840 measure.

NOTE Confidence: 0.94021606

01:02:45.605 --> 01:02:47.365 Thank you, everyone. We are

NOTE Confidence: 0.94021606

01:02:47.365 --> 01:02:48.345 at time, but,

NOTE Confidence: 0.9359561

01:02:48.885 --> 01:02:49.845 I'm sure you have other

NOTE Confidence: 0.9359561

01:02:49.845 --> 01:02:51.045 questions. So why don't we

NOTE Confidence: 0.9359561

01:02:51.045 --> 01:02:52.645 take just five minutes five

NOTE Confidence: 0.9359561

01:02:52.645 --> 01:02:53.924 to ten minutes to allow

NOTE Confidence: 0.9359561

01:02:53.924 --> 01:02:56.645 open questions for Lacey, Joey,

NOTE Confidence: 0.9359561

01:02:56.645 --> 01:02:57.924 and Max. So why don't

NOTE Confidence: 0.9359561

01:02:57.924 --> 01:02:59.305 you keep those come up?

NOTE Confidence: 0.9359561

01:02:59.444 --> 01:02:59.845 And,

NOTE Confidence: 0.968412

01:03:01.125 --> 01:03:02.220 what are the questions we

NOTE Confidence: 0.968412

01:03:02.220 --> 01:03:02.940 have out there? I'm sure

NOTE Confidence: 0.968412

01:03:02.940 --> 01:03:03.680 you have some.

NOTE Confidence: 0.8165283

01:03:15.475 --> 01:03:15.955 I have,

NOTE Confidence: 0.9836989

01:03:16.595 --> 01:03:17.955 more of a a comment

NOTE Confidence: 0.9836989

01:03:17.955 --> 01:03:19.635 for this presentation than a

NOTE Confidence: 0.9836989

01:03:19.635 --> 01:03:21.175 question, but perhaps,

NOTE Confidence: 0.99970704

01:03:22.035 --> 01:03:23.815 we can think about it.

NOTE Confidence: 0.99088544

01:03:26.010 --> 01:03:27.230 For the folks

NOTE Confidence: 1

01:03:27.610 --> 01:03:29.150 that have a

NOTE Confidence: 0.90515137

01:03:29.450 --> 01:03:30.430 profound disability,

NOTE Confidence: 0.954366

01:03:31.210 --> 01:03:32.490 and as you're saying, is

NOTE Confidence: 0.954366

01:03:32.490 --> 01:03:33.770 the population that you're really

NOTE Confidence: 0.954366

01:03:33.770 --> 01:03:34.670 aiming at,

NOTE Confidence: 0.5395508

01:03:36.650 --> 01:03:37.150 probably

NOTE Confidence: 0.9797363

01:03:38.195 --> 01:03:40.515 their families have encountered behavior

NOTE Confidence: 0.9797363

01:03:40.515 --> 01:03:41.575 analysts a lot,

NOTE Confidence: 0.9995117

01:03:42.035 --> 01:03:43.175 and they've

NOTE Confidence: 0.9572754

01:03:43.555 --> 01:03:45.955 encountered, you know, single sample

NOTE Confidence: 0.9572754

01:03:45.955 --> 01:03:48.215 design, single person designs, and

NOTE Confidence: 0.99550784

01:03:48.755 --> 01:03:50.935 that kind of work dominates

NOTE Confidence: 0.9234755

01:03:51.235 --> 01:03:53.069 the behavior analytic field. Right?

NOTE Confidence: 0.9234755

01:03:53.069 --> 01:03:54.210 So I think that,

NOTE Confidence: 1

01:03:55.150 --> 01:03:55.650 having

NOTE Confidence: 0.9921875

01:03:56.670 --> 01:03:58.369 that experience and knowing

NOTE Confidence: 0.950531

01:03:58.829 --> 01:04:00.910 everything is scored and then

NOTE Confidence: 0.950531

01:04:00.910 --> 01:04:02.430 everything has phase lines if

NOTE Confidence: 0.950531

01:04:02.430 --> 01:04:03.650 they start a new medication,

NOTE Confidence: 0.950531

01:04:03.789 --> 01:04:06.555 everything. So seeing it myself

NOTE Confidence: 0.950531

01:04:06.555 --> 01:04:07.615 for a long time,

NOTE Confidence: 1

01:04:07.915 --> 01:04:09.455 I can vouch for how

NOTE Confidence: 1

01:04:09.515 --> 01:04:10.015 incredibly

NOTE Confidence: 0.9124756

01:04:10.315 --> 01:04:11.695 powerful it is because

NOTE Confidence: 1

01:04:12.155 --> 01:04:13.215 you can see something

NOTE Confidence: 0.8375651

01:04:13.755 --> 01:04:15.215 happening and then

NOTE Confidence: 0.9650879

01:04:15.675 --> 01:04:17.435 a drug change happens or,

NOTE Confidence: 0.9650879

01:04:17.435 --> 01:04:19.035 you know, specific event happens

NOTE Confidence: 0.9650879

01:04:19.035 --> 01:04:20.390 or an illness, and then

NOTE Confidence: 0.9650879

01:04:20.390 --> 01:04:21.990 the data completely changes, and

NOTE Confidence: 0.9650879

01:04:21.990 --> 01:04:23.690 it's extremely informative.

NOTE Confidence: 0.9944661

01:04:24.790 --> 01:04:26.150 And I guess the question

NOTE Confidence: 0.9944661

01:04:26.150 --> 01:04:27.910 is, you know, is there

NOTE Confidence: 0.9944661

01:04:27.910 --> 01:04:28.730 a collaboration

NOTE Confidence: 1

01:04:29.590 --> 01:04:30.090 with

NOTE Confidence: 0.9930013

01:04:30.470 --> 01:04:32.390 the behavior analytic field on

NOTE Confidence: 0.9930013

01:04:32.390 --> 01:04:32.890 developing

NOTE Confidence: 0.9669966

01:04:33.190 --> 01:04:35.145 these measurements? Because I have

NOTE Confidence: 0.9669966

01:04:35.145 --> 01:04:36.665 the same concern is that

NOTE Confidence: 0.9669966

01:04:36.665 --> 01:04:37.165 there's,

NOTE Confidence: 0.9853901

01:04:37.865 --> 01:04:38.985 you know, a lack of

NOTE Confidence: 0.9853901

01:04:38.985 --> 01:04:40.585 validity and reliability in the

NOTE Confidence: 0.9853901

01:04:40.585 --> 01:04:41.785 measures that we use. But

NOTE Confidence: 0.9853901

01:04:41.785 --> 01:04:43.405 I think that that

NOTE Confidence: 1

01:04:43.705 --> 01:04:45.325 field can be very informative

NOTE Confidence: 1

01:04:45.465 --> 01:04:46.445 in this population.

NOTE Confidence: 0.9781494

01:04:47.065 --> 01:04:48.205 So one of my

NOTE Confidence: 0.999721

01:04:49.720 --> 01:04:51.000 one of my favorite things

NOTE Confidence: 0.999721

01:04:51.000 --> 01:04:51.580 is that

NOTE Confidence: 0.9760742

01:04:52.040 --> 01:04:52.280 I

NOTE Confidence: 0.9549551

01:04:53.320 --> 01:04:54.440 at Children's, we have a

NOTE Confidence: 0.9549551

01:04:54.440 --> 01:04:55.640 bunch of behavior analysts that,

NOTE Confidence: 0.9549551

01:04:55.640 --> 01:04:56.840 like, are in our outpatient

NOTE Confidence: 0.9549551

01:04:56.840 --> 01:04:57.800 clinic that, like, when I

NOTE Confidence: 0.9549551

01:04:57.800 --> 01:04:58.760 have someone having a hard

NOTE Confidence: 0.9549551

01:04:58.760 --> 01:05:00.200 time, we have, like, behavior

NOTE Confidence: 0.9549551

01:05:00.200 --> 01:05:01.240 analysts who are, like, ready

NOTE Confidence: 0.9549551

01:05:01.240 --> 01:05:02.760 to run-in an endpoint, which

NOTE Confidence: 0.9549551

01:05:02.760 --> 01:05:03.660 is, like, amazing.

NOTE Confidence: 0.92862475

01:05:04.565 --> 01:05:05.765 But they're really good thought

NOTE Confidence: 0.92862475

01:05:05.765 --> 01:05:07.205 thought partners and part of

NOTE Confidence: 0.92862475

01:05:07.205 --> 01:05:08.565 these research teams to think

NOTE Confidence: 0.92862475

01:05:08.565 --> 01:05:09.625 about what

NOTE Confidence: 0.91715497

01:05:10.405 --> 01:05:11.445 how do we design this

NOTE Confidence: 0.91715497

01:05:11.445 --> 01:05:12.425 and what is meaningful.

NOTE Confidence: 0.9890137

01:05:12.805 --> 01:05:13.625 So I think,

NOTE Confidence: 0.973004

01:05:14.805 --> 01:05:15.685 you know, some of it

NOTE Confidence: 0.973004

01:05:15.685 --> 01:05:17.205 is actually incorporating that data,

NOTE Confidence: 0.973004

01:05:17.205 --> 01:05:18.165 and it's something I kind

NOTE Confidence: 0.973004

01:05:18.165 --> 01:05:19.525 of routinely do that, like,

NOTE Confidence: 0.973004

01:05:19.525 --> 01:05:20.500 every single week for all

NOTE Confidence: 0.973004

01:05:20.500 --> 01:05:21.780 of my patients when we

NOTE Confidence: 0.973004

01:05:21.780 --> 01:05:22.600 have an appointment.

NOTE Confidence: 0.9583077

01:05:23.140 --> 01:05:24.740 I'm getting those, like, graphs

NOTE Confidence: 0.9583077

01:05:24.740 --> 01:05:26.420 uploaded from their BCBAs at

NOTE Confidence: 0.9583077

01:05:26.420 --> 01:05:27.620 home. And I think it's

NOTE Confidence: 0.9583077

01:05:27.620 --> 01:05:28.980 super useful for me. I

NOTE Confidence: 0.9583077

01:05:28.980 --> 01:05:29.860 think the question is how

NOTE Confidence: 0.9583077

01:05:29.860 --> 01:05:30.820 do we store that? And

NOTE Confidence: 0.9583077

01:05:30.820 --> 01:05:31.780 I think that's, like, really

NOTE Confidence: 0.9583077

01:05:31.780 --> 01:05:32.820 what the data question is.

NOTE Confidence: 0.9583077

01:05:32.820 --> 01:05:33.860 I think, like, it's being

NOTE Confidence: 0.9583077

01:05:33.860 --> 01:05:34.360 collected.

NOTE Confidence: 0.9941406

01:05:34.820 --> 01:05:35.480 I think

NOTE Confidence: 0.93671876

01:05:37.635 --> 01:05:38.355 on a lot of ways,

NOTE Confidence: 0.93671876

01:05:38.355 --> 01:05:39.735 it's on us because, like,

NOTE Confidence: 0.9811876

01:05:40.195 --> 01:05:41.075 you know, if you put

NOTE Confidence: 0.9811876

01:05:41.075 --> 01:05:42.195 something in a filing cabinet,

NOTE Confidence: 0.9811876

01:05:42.195 --> 01:05:43.235 it's easier to find. If

NOTE Confidence: 0.9811876

01:05:43.235 --> 01:05:43.955 you put it in a

NOTE Confidence: 0.9811876

01:05:43.955 --> 01:05:45.235 stack of paper and then

NOTE Confidence: 0.9811876

01:05:45.235 --> 01:05:46.355 just, like, toss it on

NOTE Confidence: 0.9811876

01:05:46.355 --> 01:05:47.635 a desk, it gets really

NOTE Confidence: 0.9811876

01:05:47.635 --> 01:05:48.135 messy.

NOTE Confidence: 0.98140913

01:05:49.450 --> 01:05:50.810 Can I speculate for one

NOTE Confidence: 0.98140913

01:05:50.810 --> 01:05:51.850 thing? So I come from

NOTE Confidence: 0.98140913

01:05:51.850 --> 01:05:52.810 a different area, but I

NOTE Confidence: 0.98140913

01:05:52.810 --> 01:05:53.930 also think, like, it echoes

NOTE Confidence: 0.98140913

01:05:53.930 --> 01:05:55.210 what Max said about considering

NOTE Confidence: 0.98140913

01:05:55.210 --> 01:05:55.950 the population,

NOTE Confidence: 0.9839533

01:05:56.490 --> 01:05:57.850 which is, for example, in,

NOTE Confidence: 0.9839533

01:05:57.850 --> 01:05:59.290 like, individuals with chronic pain

NOTE Confidence: 0.9839533

01:05:59.290 --> 01:05:59.930 that we have a lot

NOTE Confidence: 0.9839533

01:05:59.930 --> 01:06:01.575 of EMA data for, almost

NOTE Confidence: 0.9839533

01:06:01.575 --> 01:06:02.775 seventy percent of the variance

NOTE Confidence: 0.9839533

01:06:02.775 --> 01:06:04.215 in pain ratings comes within

NOTE Confidence: 0.9839533

01:06:04.215 --> 01:06:05.515 individual, not between.

NOTE Confidence: 0.9889471

01:06:05.974 --> 01:06:07.335 So I think getting that

NOTE Confidence: 0.9889471

01:06:07.335 --> 01:06:09.675 clear cut, like, intervention drug

NOTE Confidence: 0.9889471

01:06:09.895 --> 01:06:10.395 effect,

NOTE Confidence: 0.9966042

01:06:10.935 --> 01:06:12.535 in our opinion, would require,

NOTE Confidence: 0.9966042

01:06:12.535 --> 01:06:14.770 like, really nice EMA style

NOTE Confidence: 0.9966042

01:06:14.770 --> 01:06:15.270 data

NOTE Confidence: 0.99254555

01:06:15.650 --> 01:06:16.690 over time to be able

NOTE Confidence: 0.99254555

01:06:16.690 --> 01:06:17.890 to even make any confident

NOTE Confidence: 0.99254555

01:06:17.890 --> 01:06:18.849 claim that, like, drug a

NOTE Confidence: 0.99254555

01:06:18.849 --> 01:06:20.049 worked or something like that.

NOTE Confidence: 0.99254555

01:06:20.049 --> 01:06:21.250 And so considering the amount

NOTE Confidence: 0.99254555

01:06:21.250 --> 01:06:22.369 of like, I don't know,

NOTE Confidence: 0.907866

01:06:22.930 --> 01:06:23.970 I don't know how variance,

NOTE Confidence: 0.907866

01:06:23.970 --> 01:06:24.710 like, catatonia

NOTE Confidence: 0.9634294

01:06:25.010 --> 01:06:26.130 is across time, but, like,

NOTE Confidence: 0.9634294

01:06:26.130 --> 01:06:27.010 I think that's a key

NOTE Confidence: 0.9634294

01:06:27.010 --> 01:06:28.244 element for this. Yeah. And

NOTE Confidence: 0.9634294

01:06:28.244 --> 01:06:28.964 I think it was some

NOTE Confidence: 0.9634294

01:06:29.045 --> 01:06:29.765 one of the questions we

NOTE Confidence: 0.9634294

01:06:29.765 --> 01:06:31.125 post to our community advisory

NOTE Confidence: 0.9634294

01:06:31.125 --> 01:06:32.404 board of, like, how frequent

NOTE Confidence: 0.9634294

01:06:32.404 --> 01:06:33.525 would you wanna hear from

NOTE Confidence: 0.9634294

01:06:33.525 --> 01:06:35.045 us? Yeah. Yeah. Like, when

NOTE Confidence: 0.9634294

01:06:35.045 --> 01:06:36.565 we're making a medication change,

NOTE Confidence: 0.9634294

01:06:36.565 --> 01:06:38.025 would you fill something out

NOTE Confidence: 0.9634294

01:06:38.244 --> 01:06:39.385 every single day

NOTE Confidence: 0.99049014

01:06:39.810 --> 01:06:41.170 for two weeks? And they

NOTE Confidence: 0.99049014

01:06:41.170 --> 01:06:42.550 were like, yeah. Hundred percent.

NOTE Confidence: 0.99049014

01:06:42.690 --> 01:06:43.730 As long as someone's looking

NOTE Confidence: 0.99049014

01:06:43.730 --> 01:06:44.450 at it on the other

NOTE Confidence: 0.99049014

01:06:44.450 --> 01:06:44.950 end

NOTE Confidence: 0.96972656

01:06:45.330 --> 01:06:45.830 yeah.

NOTE Confidence: 0.9756921

01:06:47.090 --> 01:06:48.290 They don't want data that's

NOTE Confidence: 0.9756921

01:06:48.290 --> 01:06:49.330 going nowhere. They want their

NOTE Confidence: 0.9756921

01:06:49.330 --> 01:06:50.210 doctor to look at it.

NOTE Confidence: 0.9756921

01:06:50.210 --> 01:06:50.930 And I think that's a

NOTE Confidence: 0.9756921

01:06:50.930 --> 01:06:52.230 different question, but

NOTE Confidence: 0.9746094

01:06:52.930 --> 01:06:54.535 families are, like, sitting out

NOTE Confidence: 0.9746094

01:06:54.535 --> 01:06:55.175 here in the void, and

NOTE Confidence: 0.9746094

01:06:55.175 --> 01:06:56.315 they're like, I don't know

NOTE Confidence: 0.96831053

01:06:56.695 --> 01:06:57.835 what the heck I'm doing.

NOTE Confidence: 0.94921875

01:06:58.375 --> 01:06:59.375 And they're really looking for

NOTE Confidence: 0.94921875

01:06:59.375 --> 01:07:00.395 a partner in this.

NOTE Confidence: 0.92163086

01:07:04.775 --> 01:07:05.755 Any other questions?

NOTE Confidence: 0.99365234

01:07:06.524 --> 01:07:07.024 Comments?

NOTE Confidence: 0.99665177

01:07:07.884 --> 01:07:09.404 Okay. I'd like you all

NOTE Confidence: 0.99665177

01:07:09.404 --> 01:07:09.964 to give,

NOTE Confidence: 0.976671

01:07:10.764 --> 01:07:12.764 these three wonderful, talented speakers

NOTE Confidence: 0.976671

01:07:12.764 --> 01:07:13.904 a round of applause.