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Table S1. ADHD and autism items, the number of parents (of N = 7,723) who endorsed each item and the percentage of missing data for each item

| Autism symptoms | | |
|--|-----------|-------------|
| | Frequency | Missingness |
| Does s/he join in playing games with other children easily? (CAST 1) * | 447 | 0.39% |
| Does s/he come up to you spontaneously for a chat? (CAST 2) * | 905 | 0.33% |
| Is it important to him/her to fit in with the peer group? (CAST 5) * | 561 | 0.87% |
| Does s/he appear to notice unusual details that others miss? (CAST 6) ** | 4,303 | 1.37% |
| Does s/he tend to take things literally? (CAST 7) ** | 3,229 | 1.78% |
| When s/he was 3 years old, did s/he spend a lot of time pretending (e.g., play-acting being a superhero, or holding teddy's tea parties)? (CAST 8) * | 3,714 | 1.13% |
| Does s/he like to do things over and over again, in the same way all the time? (CAST 9) ** | 1,293 | 1.14% |
| Does s/he find it easy to interact with other children? (CAST 10) * | 878 | 0.71% |
| Can s/he keep a two-way conversation going? (CAST 11) * | 869 | 0.78% |
| Does s/he mostly have the same interests as his/her peers? (CAST 13) * | 918 | 1.01% |
| Does s/he have an interest which takes up so much time that s/he does little else? (CAST 14) ** | 2,316 | 1.29% |
| Does s/he have friends, rather than just acquaintances? (CAST 15) * | 1,000 | 0.86% |
| Does s/he often bring you things s/he is interested into show you? (CAST 16) * | 652 | 0.56% |
| Does s/he enjoy joking around? (CAST 17) * | 351 | 0.52% |
| Does s/he have difficulty in understanding the rules for polite behavior? (CAST 18) ** | 1,568 | 3.34% |
| Does s/he appear to have an unusual memory for details? (CAST 19) ** | 2,235 | 1.94% |
| Is his/her voice unusual (e.g. overly adult, flat or very monotonous)? (CAST 20) ** | 1,969 | 2.37% |
| Are people important to him/her? (CAST 21) * | 141 | 0.86% |
| Is s/he good at turn-taking in conversation? (CAST 23) * | 1,512 | 1.44% |

| | | |
|--|-----------|-------------|
| Does s/he play imaginatively with other children and engage in role-play? (CAST 24) * | 3,394 | 1.18% |
| Does s/he often do or say things that are tactless or socially inappropriate? (CAST 25) ** | 899 | 2.36% |
| Does s/he make normal eye contact? (CAST 27) * | 945 | 1.83% |
| Does s/he have any unusual repetitive movements? (CAST 28) ** | 554 | 3.14% |
| Is his/her social behavior very one-sided and always on his/her own terms? (CAST 29) ** | 2,948 | 4.24% |
| Does s/he sometimes say “you” or “s/he” when s/he means “I”? (CAST 30) ** | 1,065 | 2.86% |
| Does s/he prefer imaginative activities such as play-acting or story-telling, rather than numbers or lists of facts? (CAST 31) * | 1,559 | 2.75% |
| Does s/he sometimes lose the listener because of not explaining what s/he is talking about? (CAST 32) ** | 1,732 | 2.53% |
| Does s/he try to impose routines on him/herself, or on others, in such a way that it causes problems? (CAST 34) ** | 785 | 2.29% |
| Does s/he care how s/he is perceived in the rest of the group? (CAST 35) * | 3,103 | 2.93% |
| Does s/he often turn conversations to his/her favorite subject rather than following what the other person wants to talk about? (CAST 36) ** | 1,889 | 3.03% |
| Does s/he have odd or unusual phrases? (CAST 37) ** | 475 | 4.75% |
| Attention-deficit/hyperactivity disorder symptoms | | |
| | Frequency | Missingness |
| Often fails to give close attention to details or makes careless mistakes in schoolwork or tasks. (SNAP 1) | 1,072 | 2.31% |
| Often has difficulty sustaining attention in tasks or play activities. (SNAP 2) | 744 | 1.66% |
| Often does not seem to listen when spoken to directly (SNAP 3) | 644 | 2.21% |
| Often does not follow through on instructions and fails to finish schoolwork, chores, or duties. (SNAP 4) | 866 | 1.47% |
| Often has difficulty organizing tasks and activities. (SNAP 5) | 867 | 2.02% |
| Often avoids, dislikes, or reluctantly engages in tasks requiring sustained mental effort. (SNAP 6) | 967 | 1.94% |
| Often loses things necessary for activities (e.g., toys, school assignments, pencils or books. (SNAP 7) | 1,121 | 1.20% |
| Often is distracted by extraneous stimuli. (SNAP 8) | 1,337 | 1.40% |

| | | |
|--|-------|-------|
| Often is forgetful in daily activities. (SNAP 9) | 911 | 1.47% |
| Often fidgets with hands or feet or squirms in seat. (SNAP 10) | 1,099 | 1.17% |
| Often leaves seat in classroom or in other situations in which remaining seated is expected. (SNAP 11) | 582 | 1.79% |
| Often runs about or climbs excessively in situations in which it is inappropriate. (SNAP 12) | 391 | 1.21% |
| Often has difficulty playing or engaging in leisure activities quietly. (SNAP 13) | 424 | 1.10% |
| Often is "on the go" or often acts as if "driven by a motor". (SNAP 14) | 1,090 | 1.24% |
| Often talks excessively. (SNAP 15) | 1,703 | 1.95% |
| Often blurts out answers before questions have been completed. (SNAP 16) | 1,144 | 0.68% |
| Often has difficulty awaiting turn. (SNAP 17) | 1,003 | 0.66% |
| Often interrupts or intrudes on others (e.g., butts into conversations/ games. (SNAP 18) | 1,223 | 0.68% |

Frequencies in the second column indicate the number of parents who reported that their child displays this symptom. Percentages in the third column indicate the percentage of missing data for each item.

* the answer 'no' to this question indicates the endorsement of the autistic symptom.

** the answer 'yes' to this question indicates the endorsement of the autistic symptom.

Table S2. Connections (edges) between autism and ADHD symptoms and their respective edge weights

| Edge | Weight |
|--|--------|
| Does s/he join in playing games with other children easily? (CAST 1) *; Often has difficulty sustaining attention in tasks or play activities. (SNAP 2) | 0.33 |
| Does s/he join in playing games with other children easily? (CAST 1) *; Often avoids, dislikes, or reluctantly engages in tasks requiring sustained mental effort. (SNAP 6) | 0.27 |
| Does s/he join in playing games with other children easily? (CAST 1) *; Often is distracted by extraneous stimuli. (SNAP 8) | 0.21 |
| Does s/he come up to you spontaneously for a chat? (CAST 2) *; Often talks excessively. (SNAP 15) | -0.17 |
| Does s/he come up to you spontaneously for a chat? (CAST 2) *; Often is forgetful in daily activities. (SNAP 9) | 0.21 |
| Does s/he come up to you spontaneously for a chat? (CAST 2) *; Often fidgets with hands or feet or squirms in seat. (SNAP 10) | 0.18 |
| Does s/he come up to you spontaneously for a chat? (CAST 2) *; Often avoids, dislikes, or reluctantly engages in tasks requiring sustained mental effort. (SNAP 6) | 0.14 |
| Does s/he come up to you spontaneously for a chat? (CAST 2) *; Often does not follow through on instructions and fails to finish schoolwork, chores, or duties. (SNAP 4) | 0.08 |
| Does s/he appear to notice unusual details that others miss? (CAST 6) **; Often talks excessively. (SNAP 15) | 0.08 |
| Does s/he like to do things over and over again, in the same way all the time? (CAST 9) **; Often does not seem to listen when spoken to directly (SNAP 3) | 0.11 |
| Does s/he find it easy to interact with other children? (CAST 10) *; Often fidgets with hands or feet or squirms in seat. (SNAP 10) | 0.25 |
| Can s/he keep a two-way conversation going? (CAST 11) *; Often talks excessively. (SNAP 15) | -0.34 |
| Can s/he keep a two-way conversation going? (CAST 11) *; Often has difficulty playing or engaging in leisure activities quietly. (SNAP 13) | 0.16 |
| Can s/he keep a two-way conversation going? (CAST 11) *; Often avoids, dislikes, or reluctantly engages in tasks requiring sustained mental effort. (SNAP 6) | 0.13 |
| Does s/he have an interest which takes up so much time that s/he does little else? (CAST 14) **; Often does not follow through on instructions and fails to finish schoolwork, chores, or duties. (SNAP 4) | 0.13 |
| Does s/he have an interest which takes up so much time that s/he does little else? (CAST 14) **; Often is forgetful in daily activities. (SNAP 9) | 0.07 |
| Does s/he have friends, rather than just acquaintances? (CAST 15) *; Often does not follow through on instructions and fails to finish schoolwork, chores, or duties. (SNAP 4) | 0.1 |
| Does s/he have friends, rather than just acquaintances? (CAST 15) *; Often has difficulty awaiting turn. (SNAP 17) | 0.1 |

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| Does s/he have difficulty in understanding the rules for polite behavior? (CAST 18) **; Often loses things necessary for activities (e.g., toys, school assignments, pencils or books. (SNAP 7) | 0.27 |
| Does s/he have difficulty in understanding the rules for polite behavior? (CAST 18) **; Often leaves seat in classroom or in other situations in which remaining seated is expected. (SNAP 11) | 0.20 |
| Does s/he have difficulty in understanding the rules for polite behavior? (CAST 18) **; Often avoids, dislikes, or reluctantly engages in tasks requiring sustained mental effort. (SNAP 6) | 0.15 |
| Does s/he have difficulty in understanding the rules for polite behavior? (CAST 18) **; Often is "on the go" or often acts as if "driven by a motor". (SNAP 14) | 0.15 |
| Does s/he have difficulty in understanding the rules for polite behavior? (CAST 18) **; Often has difficulty awaiting turn. (SNAP 17) | 0.15 |
| Does s/he have difficulty in understanding the rules for polite behavior? (CAST 18) **; Often does not seem to listen when spoken to directly (SNAP 3) | 0.14 |
| Does s/he appear to have an unusual memory for details? (CAST 19) **; Often talks excessively. (SNAP 15) | 0.16 |
| Does s/he appear to have an unusual memory for details? (CAST 19) **; Often is "on the go" or often acts as if "driven by a motor". (SNAP 14) | 0.1 |
| Is s/he good at turn-taking in conversation? (CAST 23) *; Often interrupts or intrudes on others (e.g., butts into conversations/ games. (SNAP 18) | 0.82 |
| Is s/he good at turn-taking in conversation? (CAST 23) *; Often talks excessively. (SNAP 15) | 0.40 |
| Is s/he good at turn-taking in conversation? (CAST 23) *; Often runs about or climbs excessively in situations in which it is inappropriate. (SNAP 12) | 0.22 |
| Is s/he good at turn-taking in conversation? (CAST 23) *; Often is distracted by extraneous stimuli. (SNAP 8) | 0.19 |
| Is s/he good at turn-taking in conversation? (CAST 23) *; Often has difficulty awaiting turn. (SNAP 17) | 0.17 |
| Is s/he good at turn-taking in conversation? (CAST 23) *; Often does not seem to listen when spoken to directly (SNAP 3) | 0.12 |
| Is s/he good at turn-taking in conversation? (CAST 23) *; Often avoids, dislikes, or reluctantly engages in tasks requiring sustained mental effort. (SNAP 6) | 0.09 |
| Is s/he good at turn-taking in conversation? (CAST 23) *; Often loses things necessary for activities (e.g., toys, school assignments, pencils or books. (SNAP 7) | 0.08 |
| Does s/he play imaginatively with other children and engage in role-play? (CAST 24) *; Often does not follow through on instructions and fails to finish schoolwork, chores, or duties. (SNAP 4) | 0.27 |
| Does s/he play imaginatively with other children and engage in role-play? (CAST 24) *; Often is "on the go" or often acts as if "driven by a motor". (SNAP 14) | -0.14 |
| Does s/he play imaginatively with other children and engage in role-play? (CAST 24) *; Often talks excessively. (SNAP 15) | -0.07 |
| Does s/he often do or say things that are tactless or socially inappropriate? (CAST 25) **; Often runs about or climbs excessively in situations in which it is inappropriate. (SNAP 12) | 0.14 |
| Does s/he often do or say things that are tactless or socially inappropriate? (CAST 25) **; Often loses things necessary for activities (e.g., toys, school assignments, pencils or books. (SNAP 7) | 0.08 |
| Does s/he often do or say things that are tactless or socially inappropriate? (CAST 25) **; Often interrupts or intrudes on others (e.g., butts into conversations/ games. (SNAP 18) | 0.08 |

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| Does s/he have any unusual repetitive movements? (CAST 28) **; Often fidgets with hands or feet or squirms in seat. (SNAP 10) | 0.76 |
| Is his/her social behavior very one-sided and always on his/her own terms? (CAST 29) **; Often has difficulty awaiting turn. (SNAP 17) | 0.2 |
| Does s/he sometimes lose the listener because of not explaining what s/he is talking about? (CAST 32) **; Often does not seem to listen when spoken to directly (SNAP 3) | 0.25 |
| Does s/he sometimes lose the listener because of not explaining what s/he is talking about? (CAST 32) **; Often avoids, dislikes, or reluctantly engages in tasks requiring sustained mental effort. (SNAP 6) | 0.16 |
| Does s/he sometimes lose the listener because of not explaining what s/he is talking about? (CAST 32) **; Often has difficulty sustaining attention in tasks or play activities. (SNAP 2) | 0.15 |
| Does s/he sometimes lose the listener because of not explaining what s/he is talking about? (CAST 32) **; Often has difficulty organizing tasks and activities. (SNAP 5) | 0.09 |
| Does s/he sometimes lose the listener because of not explaining what s/he is talking about? (CAST 32) **; Often loses things necessary for activities (e.g., toys, school assignments, pencils or books. (SNAP 7) | 0.09 |
| Does s/he sometimes lose the listener because of not explaining what s/he is talking about? (CAST 32) **; Often has difficulty awaiting turn. (SNAP 17) | 0.07 |
| Does s/he sometimes lose the listener because of not explaining what s/he is talking about? (CAST 32) **; Often fidgets with hands or feet or squirms in seat. (SNAP 10) | 0.04 |
| Does s/he often turn conversations to his/her favorite subject rather than following what the other person wants to talk about? (CAST 36) **; Often talks excessively. (SNAP 15) | 0.34 |
| Does s/he often turn conversations to his/her favorite subject rather than following what the other person wants to talk about? (CAST 36) **; Often has difficulty awaiting turn. (SNAP 17) | 0.33 |
| Does s/he often turn conversations to his/her favorite subject rather than following what the other person wants to talk about? (CAST 36) **; Often does not follow through on instructions and fails to finish schoolwork, chores, or duties. (SNAP 4) | 0.22 |
| Does s/he often turn conversations to his/her favorite subject rather than following what the other person wants to talk about? (CAST 36) **; Often is “on the go” or often acts as if “driven by a motor”. (SNAP 14) | 0.15 |
| Does s/he often turn conversations to his/her favorite subject rather than following what the other person wants to talk about? (CAST 36) **; Often blurts out answers before questions have been completed. (SNAP 16) | 0.15 |
| Does s/he often turn conversations to his/her favorite subject rather than following what the other person wants to talk about? (CAST 36) **; Often interrupts or intrudes on others (e.g., butts into conversations/ games. (SNAP 18) | 0.11 |

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|---|------|
| Does s/he often turn conversations to his/her favorite subject rather than following what the other person wants to talk about? (CAST 36) **; Often avoids, dislikes, or reluctantly engages in tasks requiring sustained mental effort. (SNAP 6) | 0.09 |
|---|------|

* the answer 'no' to this question indicates the endorsement of the autistic symptom.
** the answer 'yes' to this question indicates the endorsement of the autistic symptom.

Table S3. Expected influence and bridge expected influence for each ADHD and autism symptom in the network

| Autism symptoms | EI | Bridge EI |
|--|-----------|------------------|
| Does s/he join in playing games with other children easily? (CAST 1) * | 5.23 | 0.70 |
| Does s/he come up to you spontaneously for a chat? (CAST 2) * | 5.04 | 0.45 |
| Is it important to him/her to fit in with the peer group? (CAST 5) * | 5.27 | 0.05 |
| Does s/he appear to notice unusual details that others miss? (CAST 6) ** | 0.45 | 0.09 |
| Does s/he tend to take things literally? (CAST 7) ** | 1.31 | 0.05 |
| When s/he was 3 years old, did s/he spend a lot of time pretending (e.g., play-acting being a superhero, or holding teddy's tea parties)? (CAST 8) * | 0.38 | 0 |
| Does s/he like to do things over and over again, in the same way all the time? (CAST 9) ** | 3.71 | 0.27 |
| Does s/he find it easy to interact with other children? (CAST 10) * | 6.08 | 0.25 |
| Can s/he keep a two-way conversation going? (CAST 11) * | 4.40 | 0.09 |
| Does s/he mostly have the same interests as his/her peers? (CAST 13) * | 3.09 | 0.08 |
| Does s/he have an interest which takes up so much time that s/he does little else? (CAST 14) ** | 3.13 | 0.19 |
| Does s/he have friends, rather than just acquaintances? (CAST 15) * | 2.67 | 0.11 |
| Does s/he often bring you things s/he is interested into show you? (CAST 16) * | 3.21 | 0 |
| Does s/he enjoy joking around? (CAST 17) * | 6.09 | 0 |
| Does s/he have difficulty in understanding the rules for polite behavior? (CAST 18) ** | 4.67 | 1.22 |
| Does s/he appear to have an unusual memory for details? (CAST 19) ** | 3.48 | 0.22 |
| Is his/her voice unusual (e.g. overly adult, flat or very monotonous)? (CAST 20) ** | 3.02 | 0.05 |
| Are people important to him/her? (CAST 21) * | 3.40 | 0 |
| Is s/he good at turn-taking in conversation? (CAST 23) * | 3.88 | 2.22 |
| Does s/he play imaginatively with other children and engage in role-play? (CAST 24) * | 3.55 | 0.03 |

| | | |
|--|-----------|------------------|
| Does s/he often do or say things that are tactless or socially inappropriate? (CAST 25) ** | 4.39 | 0.37 |
| Does s/he make normal eye contact? (CAST 27) * | 2.89 | 0 |
| Does s/he have any unusual repetitive movements? (CAST 28) ** | 4.75 | 0.83 |
| Is his/her social behavior very one-sided and always on his/her own terms? (CAST 29) ** | 2.36 | 0.22 |
| Does s/he sometimes say “you” or “s/he” when s/he means “I”? (CAST 30) ** | 3.17 | 0 |
| Does s/he prefer imaginative activities such as play-acting or story-telling, rather than numbers or lists of facts? (CAST 31) * | -1.04 | 0 |
| Does s/he sometimes lose the listener because of not explaining what s/he is talking about? (CAST 32) ** | 5.05 | 0.83 |
| Does s/he try to impose routines on him/herself, or on others, in such a way that it causes problems? (CAST 34) ** | 4.69 | 0 |
| Does s/he care how s/he is perceived in the rest of the group? (CAST 35) * | -0.04 | -0.02 |
| Does s/he often turn conversations to his/her favorite subject rather than following what the other person wants to talk about? (CAST 36) ** | 5.29 | 1.26 |
| Does s/he have odd or unusual phrases? (CAST 37) ** | 3.59 | 0 |
| Attention-deficit/hyperactivity disorder symptoms | EI | Bridge EI |
| Often fails to give close attention to details or makes careless mistakes in schoolwork or tasks. (SNAP 1) | 6.09 | 0 |
| Often has difficulty sustaining attention in tasks or play activities. (SNAP 2) | 5.80 | 0.39 |
| Often does not seem to listen when spoken to directly (SNAP 3) | 4.71 | 0.76 |
| Often does not follow through on instructions and fails to finish schoolwork, chores, or duties. (SNAP 4) | 7.14 | 0.55 |
| Often has difficulty organizing tasks and activities. (SNAP 5) | 6.19 | 0 |
| Often avoids, dislikes, or reluctantly engages in tasks requiring sustained mental effort. (SNAP 6) | 6.32 | 1.06 |
| Often loses things necessary for activities (e.g., toys, school assignments, pencils or books). (SNAP 7) | 5.10 | 0.54 |
| Often is distracted by extraneous stimuli. (SNAP 8) | 8.29 | 0.41 |
| Often is forgetful in daily activities. (SNAP 9) | 6.09 | 0.28 |
| Often fidgets with hands or feet or squirms in seat. (SNAP 10) | 7.82 | 1.29 |

| | | |
|--|------|------|
| Often leaves seat in classroom or in other situations in which remaining seated is expected. (SNAP 11) | 5.20 | 0.41 |
| Often runs about or climbs excessively in situations in which it is inappropriate. (SNAP 12) | 5.62 | 0.56 |
| Often has difficulty playing or engaging in leisure activities quietly. (SNAP 13) | 3.70 | 0 |
| Often is "on the go" or often acts as if "driven by a motor". (SNAP 14) | 5.82 | 0.27 |
| Often talks excessively. (SNAP 15) | 5.15 | 0.71 |
| Often blurts out answers before questions have been completed. (SNAP 16) | 5.70 | 0.60 |
| Often has difficulty awaiting turn. (SNAP 17) | 7.01 | 0.93 |
| Often interrupts or intrudes on others (e.g., butts into conversations/ games). (SNAP 18) | 6.53 | 0.84 |

EI: the sum of all positive edges subtracted by the sum of all negative edges; bridge EI: the sum of all cross-construct positive edges subtracted by the sum of all negative cross-construct edges

* the answer 'no' to this question indicates the endorsement of the autistic symptom.

** the answer 'yes' to this question indicates the endorsement of the autistic symptom.