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## BITSEA and SDQ: Screening for psychosocial problems in preventive child health care

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ZonMw

CEPHIR

CEPHIR is the academic partnership of the department of Public Health of Erasmus MC and the Municipal Public Health Service Rotterdam-Rijnmond. Other CEPHIR partners are the MPHS Zuid-Holland Zuid, MPHS, Zuid-Hollandse Eilanden, STI/AIDS Netherlands and the Netherlands Nutrition Centre.

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## BITSEA study - Characteristics

	Community sample	ASD sample
N	3127	159
Gender [boys]	51%	79%
Age (M(SD))	23.7 (0.7)	31.8 (6.4)
BITSEA Problem score (M(SD))	7.8 (0.7)	31.8 (6.4)
BITSEA Competence score (M(SD))	17.5 (3.0)	10.0 (4.0)

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## The preventive child health care in the Netherlands

- All children receive a preventive health check at 8 specific moments in life.
- In advance parents (and teachers) receive a screening questionnaire
- During the visit the children are screened for physical and psychosocial problems

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## BITSEA study – ROC

ROC curve for the Problem & Competence scale (AUC=area under the curve)

Legend:  
 — Problem scale - AUC=0.90  
 - - - Competence scale - AUC=0.93  
 ..... Reference line

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## Introduction

- Prevalence of psychosocial problems with a negative impact on later life is 2-5% (Hermans, 2005)
- Early detection of psychosocial problems can lead to health benefits (Licence, 2004 7 Durlak, 1998)
- The BITSEA and the SDQ seem to be promising instruments to screen for psychosocial problems (I.Kruizinga, 2012, C.L. Mieloo, 2012)
- Little is known about the screening accuracy of the BITSEA and the SDQ in younger age groups

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## BITSEA study - AUC

Area under the curve (95% confidence interval) for the total population and for subgroups by gender

	Problem scale	Competence scale
Total (N=3286)	0.90 (95%CI=0.87-0.92)	0.93 (95%CI=0.91-0.95)
Boys (n=1690)	0.88 (95%CI=0.85-0.91)	0.91 (95%CI=0.88-0.94)*
Girls (n=1568)	0.93 (95%CI=0.89-0.97)	0.97 (95%CI=0.95-0.98)*

\* Significant difference (95% confidence intervals do not overlap)

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**BITSEA study**

Sensitivity & specificity for the total population

Problem scale			Competence scale		
score	sensitivity	specificity	score	sensitivity	specificity
11	0.85	0.80	13	0.93	0.72
12	0.85	0.84	14	0.90	0.82
<b>13</b>	<b>0.83</b>	<b>0.84</b>	<b>15</b>	<b>0.85</b>	<b>0.89</b>
14	0.78	0.87	16	0.77	0.92
15	0.75	0.89	17	0.67	0.96

Score with highest Youden's index is indicated in bold

**SDQ study – AUC**

Area under the curve (95% confidence interval) for the total population and for subgroups by gender

Parent	Clinical population	CBCL
Total	0.88 (95%CI=0.86-0.89)	0.91 (95%CI=0.89-0.94)
Boys	0.88 (95%CI=0.86-0.89)	0.90 (95%CI=0.86-0.93)
Girls	0.86 (95%CI=0.83-0.89)	0.94 (95%CI=0.91-0.96)

Teacher	Clinical population	TRF
Total	0.85 (95%CI=0.83-0.87)	0.91 (95%CI=0.87-0.95)
Boys	0.85 (95%CI=0.83-0.87)	0.92 (95%CI=0.87-0.97)
Girls	0.83 (95%CI=0.79-0.87)	0.91 (95%CI=0.85-0.96)

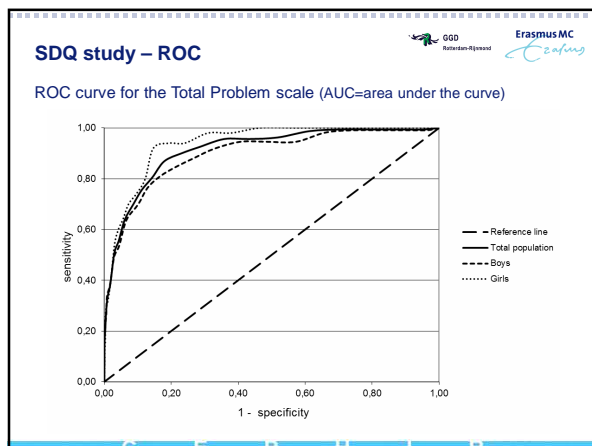
**SDQ study - Characteristics**

	Reference sample		Clinical sample	
	Parent	Teacher	Parent	Teacher
N	13,546	15,678	675	428
Gender [boys]	50%	50%	72%	71%
Age [M(SD)]	5.3 (0.51)	5.3 (0.51)	5.5 (0.62)	5.5 (0.53)
SDQ Total Problem score [M(SD)]	6.4 (4.5)	4.7 (4.5)	15.8 (6.6)	13.1 (6.7)

**SDQ study – sensitivity & specificity by gender**

score	Boys		Girls		
	sensitivity	specificity	score	sensitivity	specificity
parent					
9	0.87	0.66	8	0.84	0.71
10	0.84	0.71	9	0.79	0.76
<b>11</b>	<b>0.81</b>	<b>0.76</b>	<b>10</b>	<b>0.77</b>	<b>0.80</b>
12	0.75	0.80	11	0.69	0.86
13	0.70	0.84	12	0.68	0.90
teacher					
7	0.85	0.68	6	0.75	0.72
8	0.81	0.74	7	0.71	0.77
<b>9</b>	<b>0.78</b>	<b>0.78</b>	<b>8</b>	<b>0.67</b>	<b>0.84</b>
10	0.74	0.82	9	0.59	0.86
11	0.69	0.85	10	0.55	0.90

Score with highest Youden's index is indicated in bold



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**Conclusion**

- The screening accuracy of the SDQ and BITSEA is of good quality
- SDQ and BITSEA are suitable for use in preventive child health care
- SDQ has different optimal cutpoints for boys and girls
- BITSEA Competence scale has different screening accuracy for boys and girls
- The choice of cutpoint might depend on application (research vs. clinical use)

### Recommendations

- Evaluation of BITSEA with reference groups that consists of children with more diverse psychosocial problems
- Evaluation of the use of the questionnaires by youth health professionals: how important are the scores in the decision to refer?
- Further researcher into referral and care after screening and their effects on health in later life.

Thank you for your attention! Are there any questions?

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