

Validity of Strengths and Difficulties Questionnaires in measuring mental health symptoms in Chinese preschoolers

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INTRODUCTION

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METHOD

Emotional and behavioral problems in preschoolers may develop into mental health problems and disorders in later childhood, and targeted early preventive interventions are warranted. The availability of culturally sensitive and locally validated scales is crucial to facilitate studies in mental health profile of children in early childhood. Strengths and Difficulties Questionnaires (SDQ 2-4) is a widely-used brief screening scale for such and is available free-of-charge yet its validity remains inconclusive. This study aims to assess the internal consistency of parent-report SDQ 2-4 in a sample of Chinese preschoolers.

From January 1, 2024, to March 31, 2024, 311 parents of children aged 2 to 4 completed an electronic survey on their preschool children's mental health using the SDQ 2-4 in Hong Kong. The reliability of the SDQ 2-4 was assessed through Cronbach's alpha and McDonald's omega, and correlations with the use of childhood clinical developmental services were calculated for the overall sample as well as by gender. All analyses were conducted using R, and ethical approval was obtained.

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RESULTS

Among all children, 140 (45%) were girls, 170 (55%) were boys, and 1 parent chose not to disclose their child's gender. Thirty-four children (11.3%) were reported to have received clinical developmental services. Table 1 presents the distribution of SDQ scores for the overall sample and by gender. Boys scored **significantly higher** on the **hyperactivity, externalizing, and problem subscales**, while scoring lower on the prosocial subscale.

Table 2 displays the reliability of the SDQ 2-4 and its correlations with the use of childhood clinical developmental services. Only the **hyperactivity, prosocial, externalizing, and total problem subscales for boys**, as well as the **prosocial, externalizing, and problem subscales for girls**, demonstrated acceptable reliability, as indicated by McDonald's omega values greater than 0.7. All subscales, except for the prosocial subscale, showed weak positive correlations (**0.1–0.3**) with the use of childhood clinical developmental services.

Table 1. SDQ scores in total sample, boys and girls.

SDQ domains & scores, mean (SD)	Total sample (n=311)	Boys (n=170)	Girls (n=140)
Emotional	2.20 (1.55)	2.26 (1.61)	2.13 (1.55)
Conduct	2.57 (1.58)	2.72 (1.69)	2.38 (1.58)
Hyperactivity	4.73 (2.10)	4.96 (2.22) *	4.46 (2.10)
Peer	2.90 (1.84)	3.04 (1.94)	2.71 (1.84)
Prosocial	6.23 (1.99)	5.93 (1.99) *	6.61 (1.99)
Internalizing	5.11 (2.71)	5.30 (2.71)	4.85 (2.71)
Externalizing	7.30 (3.16)	7.68 (3.16) *	6.84 (3.16)
Total Problem	12.41 (4.76)	13.00 (5.03) *	11.69 (4.31)

*boys vs girls p<0.05

Table 2. Reliability of SDQ domans and correlations with use of clinical developmental services

		Emotional	Conduct	Hyperactivity	Peer	Prosocial	Internalizing	Externalizing	Total Problem
total sample	alpha	0.56	0.49	0.66	0.47	0.68	0.60	0.70	0.73
	omega-hi	0.41	0.48	0.37	0.39	0.61	0.47	0.58	0.64
	omega-total	0.63	0.59	0.73	0.58	0.73	0.67	0.75	0.77
boys	alpha	0.55	0.55	0.7	0.52	0.65	0.61	0.75	0.75
	omega-hi	0.32	0.35	0.43	0.46	0.57	0.45	0.53	0.35
	omega-total	0.65	0.68	0.76	0.66	0.71	0.69	0.81	0.8
girls	alpha	0.57	-0.01	0.6	0.32	0.7	0.59	0.60	0.67
	omega-hi	0.46	0.21	0.31	0.35	0.59	0.20	0.46	0.51
	omega-total	0.65	0.28	0.68	0.46	0.74	0.66	0.70	0.73
reception of clinical developmental services		0.27	0.14	0.25	0.20	-0.21	0.29	0.23	0.32

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CONCLUSION

In a sample of Chinese preschoolers, only the prosocial, externalizing, and problem subscales of the SDQ 2-4 demonstrated satisfactory internal consistency. Further research is needed to assess other validity measures, such as criterion and predictive validity of the SDQ 2-4. Additionally, exploring alternative assessment methods for Chinese preschoolers will enhance our understanding of the multidimensional aspects of mental health in this population.

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