

UNIVERSITI TEKNOLOGI MARA

**DEVELOPMENT AND VALIDATION
OF KNOWLEDGE, ATTITUDE,
SELF-EFFICACY, AND PRACTICE
TOWARDS CHILDHOOD
AUTISM SPECTRUM DISORDER
QUESTIONNAIRE (KASP-ASDQ)
AMONG PRIMARY CARE
DOCTORS**

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ABSTRACT

Primary care doctors (PCDs) play a key role in early identification of autism spectrum disorder (ASD). Knowledge, attitude, self-efficacy, and practice (KASP) towards childhood ASD in PCDs remain poorly understood, and validated tools to measure these domains are scarce. This study aimed to develop and validate a comprehensive questionnaire to measure the knowledge, attitude, self-efficacy, and practice towards childhood autism spectrum disorder (KASP-ASDQ). This study was conducted in two phases among PCDs. In Phase 1, content development team identified the construct of the questionnaire and items were generated using the deductive method based on literature review and existing tools. Phase 2a involved content validation by 7 expert panels and face validation by 10 PCDs. Phase 2b involved construct validity using exploratory factor analysis. Internal consistency was measured using Kuder-Richardson Formula 20 (KR-20) and Cronbach's alpha, and test-retest reliability was evaluated using intraclass correlation coefficients (ICC) over 2–4 weeks period. Two items were removed after content validation due to low I-CVI scores. Face validation index for all items ranged from 0.80 to 1.00. Following validation, 70 items were constructed and underwent psychometric testing with 155 PCDs. Construct validity was carried out for the attitude, self-efficacy and practice domains. Items with factor loading ≤ 0.30 and some items with cross loadings were removed during EFA. Factor structures identified were three for attitude, two for self-efficacy, and three for practice. Item reduction yielded 64 items after construct validation. Ten items were removed from the knowledge domain producing moderate internal consistency with KR-20 of 0.5. Cronbach's alpha values for attitude, self-efficacy and practice domains were 0.74, 0.94 and 0.89 respectively. Most items showed good to excellent test-retest reliability (ICC ≥ 0.60). The final 54-item KASP-ASDQ demonstrated satisfactory validity and reliability for assessing the level of knowledge, attitude, self-efficacy and practice towards childhood ASD among PCDs doctors in Malaysia.

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CHAPTER 1

INTRODUCTION

1.1 Research Background

Autism Spectrum Disorder (ASD) is a complex neurodevelopmental condition characterized by persistent challenges in social interaction, communication, and restricted, repetitive behaviour (American Psychiatric Association, 2013). Globally, the prevalence of ASD has increased, from 62 per 10,000 children in 2012 (Elsabbagh et al., 2012) to 100 per 10,000 in 2021 (Zeidan et al., 2022).

Timely diagnosis is crucial. Early intervention is associated with improvements in language, cognitive skills, and behaviour (Reichow et al., 2018). Brain plasticity, which is heightened in early childhood, underlies this responsiveness to early treatment (Church et al., 2015). Despite these benefits, diagnosis is often delayed. In Malaysia, parents typically report concerns around 24 months, but the average age at diagnosis is 46 months, indicating up to a 17-month gap (Jayanath & Ozonoff, 2020). A timely referral by primary care doctors (PCDs) is a key factor associated with early diagnosis (Girianelli et al., 2023).

Some barriers to getting a diagnosis which involve healthcare providers include lack of professional education, professional hesitancy in giving early diagnosis, inadequate number of professionals to make a diagnosis, and inadequate time to screen (Elder et al., 2016). A study showed that higher provider self-efficacy in identifying and screening for autism, along with prior training in autism, were linked to increased rates of autism screening (Mazurek et al., 2021). The attitude of the PCD towards ASD also affect management where proactive PCDs led to shorter delays in ASD diagnosis (Zuckerman et al., 2015) and those with negative attitude and beliefs are less likely to refer and advocate for autistic children (Heidgerken et al., 2005).

Knowledge, attitude, and self-efficacy are key constructs affecting healthcare delivery whereby there is an association between these variables in determining behaviours (or practice) of healthcare professionals (Alsulami et al., 2025; Liang et al., 2025). Several instruments have been developed separately to assess knowledge, attitude, self-efficacy, and practice towards ASD. Several ASD knowledge scales were developed previously with good psychometric evaluation but the intended user were