

IDENTIFICATION OF ASD IN WOMEN: THE M-ASD QUESTIONNAIRE

M.L. Bezemer, MSc, R.H. Grondhuis, MSc, & E.M.A. Blijd-Hoogewys, MSc, PhD

Introduction

Background

ASD diagnostics are based mainly on the classical ASD phenotype, thought to be more common in men. People with a **more subtle ASD phenotype**, possibly more common in women, are often under- or misdiagnosed. This 'female' phenotype seems more subtle due to better camouflaging techniques (Lai et al., 2011), a higher social motivation and gender specific preoccupations (Hiller et al., 2014). However, ASD is indisputably present.

A questionnaire considering the more subtle ASD phenotype could aid in a faster identification of women, but also of men with this more subtle phenotype. This could lead to a better prognosis, prevent secondary problems, reduce family stress and societal costs (García-Primo et al., 2014).

In 2016, we developed the **Miss-ASD questionnaire (M-ASD)**. It consists of **120 items** derived from literature search on female ASD expressions, clinical impressions of the authors, and data analysis of sex differences in adults with ASD on other questionnaires. The M-ASD **covers six domains**: Social interaction and communication, Rigidity, Coping and camouflaging, Sensory issues, Information processing, and Miscellaneous (INSAR, Grondhuis et al., 2018).

Objectives

Shortening the M-ASD for clinical use.

Methods

Adults suspected for ASD underwent ASD assessment. At start, they also completed the M-ASD. Independent researchers scored these questionnaires.

The research group consisted of **183 patients** (age: $M = 35.07$, $SD = 12.54$), of which ultimately 83% received an ASD diagnosis (see Table 1). There were 88 women and 63 men with ASD (ASD group), and 25 women and 7 men with other psychiatric diagnoses (non-ASD group).

Qualitative analyses were based on recent literature (2016-2018) and two focus groups: 1) 3 women and 1 men with ASD, and 2) 4 psychologists with elaborate ASD expertise. All gave feedback on content, wording and layout of the questionnaire. Also, new literature (2016-2018) was reviewed, and a test theorist was consulted.

Quantitative analyses consisted of individual item analyses, including discriminant indices and Fisher-tests.

For both qualitative and quantitative analyses, **items were categorized as 'keep', 'reject' or 'doubt'** (for some examples, see Table 2). When there was no full agreement, judgement was based on consensus after discussion between all researchers (for some examples, see Table 2). Thereby, statistics were considered as more decisive.

Table 1: Number of participants

Group	ASD	Non-ASD	Total
Women	88	25	113
Men	63	7	70
Total	151	32	183

Table 2: Judgment of M-ASD items

Item	Judgement statistical analyses	Judgement qualitative analyses	Decision
I'm very tense in social situations (2)	Keep	Keep	Accepted, no changes
I find it difficult to take into account social hierarchy (11)	Keep	Reject	Accepted, no changes
I am (or people say I am) too harsh or direct (23)	Keep	Doubt	Accepted, reformulation
There is little variation in my eating patterns (53)	Reject	Keep	Rejected
I find it hard to throw away things (59)	Reject	Reject	Rejected
I don't like visits (going or receiving) (3)	Doubt	Doubt	Rejected

Results

ASD patients scored higher than non-ASD patients on every M-ASD item. Based on the combination of the qualitative and quantitative analyses, the best 44 items were retained. Among them are the items that differentiated the most clearly between ASD/non-ASD, and more specifically between ASD/non-ASD women (DI 0.3-0.7, significant Fisher test). The items that best captured women with ASD (compared to men with ASD) concern **sensory and camouflage issues**.

Based on the focus groups and new literature, 15 items of the 44 items were rephrased and 6 novel items, mostly on camouflaging, were added.

The **shortened version M-ASD consists of 50 items**.

Note. Since there are also men with a more subtle ASD phenotype, we changed the name of the Miss ASD questionnaire in the M-ASD, which stands for not only Mrs. but also Mr.

Conclusions

The shortened version of the M-ASD is more appropriate for clinical use than the initial version. **The M-ASD seems to be able to capture the ASD phenotype in women**, thought to show a more subtle phenotype. The **most prominent items concern sensory and camouflaging issues**, as was expected from literature.

Most screening instruments are developed and validated in general population. Those instruments perform less well in clinical practice, in terms of sensitivity and specificity (Bezemer et al., submitted). **The M-ASD is directly developed in clinical practice**. Follow-up research will focus on further validation and standardization of this promising new screening tool in a larger clinical sample.

References

- Bezemer, M.L., & Blijd-Hoogewys, E.M.A. (2016). *Miss ASD*. Groningen: INTER-PSY.
- Bezemer, M.L., Blijd-Hoogewys, E.M.A. & Meek-Heekelaar, M. (2020). The predictive value of the AQ and the SRS-A in the diagnosis of ASD in adults in clinical practice. *Journal of Autism and Developmental Disorders*, 1-14.
- Bezemer, M.L., Grondhuis, R.H., & Blijd-Hoogewys, E.M.A. (2019). *Assessment of the female ASD phenotype: The M-ASD questionnaire*. Poster presentation at INSAR Montreal.

m.bezemer@inter-psy.nl

