The Influence of Health-Care Professionals' Work Experience in Recognition of ASD: The Moderating Role of the Number of Symptoms Presented

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Abstract

Children with Autism Spectrum Disorder (ASD) often see health-care professionals (HCPs) more frequent than typically developing children. However, not all children are recognized timely. Early recognition is important to ensure timely diagnosis, and long-term positive outcomes. The current study aims to examine whether work experience influences HCPs ability to recognize ASD. It will also examine the impact of the amount of information provided about ASD on its recognition. Finally, the interaction between work experience and the number of symptoms provided about ASD will be examined in relation to recognition of ASD. Participants (*N*=431) evaluated vignettes describing children with ASD. Results show that work experience does not influence the recognition of ASD. However, when many symptoms were presented, recognition of ASD greatly improved. Unexpectedly, this did not hold true for HCPs with little experience. The clinical practice should be aware of delayed and missed recognition in order to benefit from the merits of early interventions.

Keywords: Mental-health problems, ASD, Health-care professionals, symptoms, recognition, work experience.

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Autism Spectrum Disorder (ASD) is a pervasive developmental disorder that encompasses many areas of functioning (Charman & Baird, 2002), characterized primarily by persistent deficits in multiple contextual social communication and repetitive, restrictive patterns of behavior and interests (American Psychological Association (APA), 2013). Children with ASD often see health-care professionals (HCPs) more frequent than typically developing children. HCPs who appear to be instrumental in detection of ASD include general physicians, pediatricians, psychologists, psychiatrists, and neurologists and school-based professionals (Bultas, 2011; Burke, Koot, de Wilde & Begeer, 2015). There has been a growing awareness of ASD (Prior, 2003), however, the capacity for HCPs to recognize ASD is still low (Burke, Koot, de Wilde & Begeer 2016). The term recognition, in this sense, refers to the step before the diagnosis, that is, the point at which an HCP acknowledges the concern of the parent/caretaker that a child is displaying symptoms that may represent a clinical problem, in this case, ASD (Burke et al., 2016). Delaying the process of (early) recognition implies delayed referral, diagnosis, prognosis and intervention against ASD. This, in turn, can hinder the needed support for families to cope with ASD (Rhoades, Scarpa, & Salley, 2007).

The reported average delay between the first visit of a child with suspected ASD symptoms and the time of diagnosis is 4 years (Rhoades, Scarpa, & Salley, 2007). Some possible reasons for delaying recognition and diagnosis of ASD are that HCPs may be concerned about false positives, worrying parents and hoping for symptom reversal (Bartolo, 2002). Other HCPs could simply be lacking the experience to recognize ASD symptoms (Constantino & Charman, 2016). HCPs' work experience may be vital to meet the subtle, nonspecific and varied nature of

ASD symptoms (American Academy of Pediatricians (AAP), 2001). Moreover, symptom evaluation requires careful listening and examination of behavioral reports presented by parents/caretakers (Dillenburger, McKerr, Jordan, & Keenan, 2016). The amount of information presented by a child or provided by a parent may, therefore, influence HCPs' ability to recognize ASD (Burke et al., 2016). In order to ensure timely recognition (and in turn diagnosis, referral and interventions) of ASD, research should investigate the factors that may influence HCPs' ability to recognize it.

ASD recognition is complex. Not all children demonstrate obvious symptoms of ASD (AAP, 2001), moreover, ASD developmental trajectories are heterogeneous. For example, the regressive type of ASD, whereby a child loses skills mostly after typical development, differs significantly from other types (Johnson & Meyer, 2007). A HCP should, therefore, have a reasonable amount of experience to meet the subtlety and complexity of ASD. However, a number of studies have found that HCPs lack ASD specific knowledge, familiarity with ASD symptoms, and the necessary skills to recognize ASD (AAP, 2001; Barnard-Brak, Richman, Ellerbeck, & Moreno, 2017). HCPs have reported difficulties in seeing the red flags that point to ASD (Crais et al., 2014). This could result in delayed recognition and diagnosis of the disorder (Barnard-Brak, Richman, Ellerbeck, & Moreno, 2017). Indeed, parents whose children received late ASD diagnosis report having seen a number of 'inexperienced' HCPs who failed to recognize ASD in their children in a timely manner (Dillenburger, McKerr, Jordan, & Keenan, 2016). Furthermore, late diagnosis correlates with delayed ASD recognition by HCPs (Barnard-Brak, Richman, Ellerbeck, & Moreno, 2017).

Research on the role of experience in clinical decision-making is rather inconsistent. Some researchers posit that experienced HCPs are better decision-makers than inexperienced

HCPs (Norman, 2005; Spengler et al., 2009). Other studies indicate the opposite (Patel & Groen, & Scott, 1998). Knowledge encapsulation theory (Schimdt et al., 2004) stipulates that knowledge acquisition and application is positively associated with the level of experience. Thus, experienced clinicians can make better and accurate clinical decisions than novices because of their wide exposure to similar clinical cases (Schimdt et al., 2004). Building on this theory, it is argued that exposure, self-competence, and knowledge of clinical manifestations of diseases are acquired as one acquires more experience in a clinical field (Norman, 2005). This is in line with recent findings whereby experienced HCPs who had frequent contacts with ASD exhibited high levels of self-competence in recognition of ASD (Unigwe, 2017).

However, alternative theory stipulates that less experienced HCPs are better at judging clinical cases because they have just been trained and have not yet picked up bad habits of delaying clinical decision-making (Patel & Groen, 1991). Moreover, researchers claim that experienced HCPs may have a tendency of holding onto old outdated beliefs about ASD, regardless of the availability of new and up to date information (AAP, 2007). Another perspective concludes that all experience and non-experienced HCP's can recognise ASD if they are knowledgeable about it. By following an appropriate education or training, the needed ASD specific knowledge can be acquired (Norman, 2005; Barnard-Brak, Richman, Ellerbeck, & Moreno, 2017). However, some researchers have found that both ASD knowledge and experience with ASD are equally important predictors of ASD recognition and care for ASD patients (Golnik, Ireland, & Borowsky, 2009). Given the lack of agreement in the current literature, examining and understanding how experience contributes to the recognition of ASD is imperative.

Presentation of ASD features in children is notoriously heterogeneous (AAP, 2007). For example, the mild type of ASD presents no distinct features from other types of disorders. The social deficits that occur in most children with ASD can make mild ASD subtle and hence barely recognizable (AAP, 2007). Furthermore, ASD symptomatology is often bound by environmental functioning and the demands of a child (Constantino & Charman, 2016). Recognizing variations in communication development and differences in developmental trajectories of ASD may require an HCP to know more about the child being evaluated. It is, therefore, likely that the more information provided about a child's symptoms, the more likely recognition of ASD is to occur. Indeed, in a recent study, HCPs found ASD difficult to recognize when presented with just a few symptoms of the disorder, however, when many symptoms of ASD were described, recognition was excellent (Burke et al., 2016). HCPs may need to see many features of ASD to eliminate the likelihood of other disorders and recognize a child with ASD (APA, 2013). Some of the core symptoms of ASD overlap with other disorders, such as social impairments in children with attention deficit hyperactivity disorder (ADHD), and qualitative impairments in communication which can be found in children with intellectual disabilities (Constantino & Charmant, 2016). Providing HCPs with more symptoms that are typical of ASD, seems to help HCPs to distinguish ASD from other potential disorders (McConaughty, 2013). Indeed, there was an enormous improvement in recognition of ASD for all the HCPs regardless of their experience when they were presented with many ASD related symptoms (Burke et al., 2016).

Although, to date, there is no empirical evidence to confirm it, it is possible that an increased number of symptoms would also improve recognition of ASD in HCPs with little experience. HCPs with little experience may possess knowledge from education and are open to applying it to the practice (Patel & Groen, 1991). If enough information is provided that point to

different symptoms of ASD, it may aid knowledgeable HCPs with little experience to recognize ASD.

Research on ASD has primarily focused on diagnosis and interventions for ASD, yet very little is known about (early) recognition, which comes before diagnosis and intervention. Only a handful of studies have examined factors that may influence HCPs' recognition of mental health problems in children (Burke et al., 2016; Burke et al, 2015; Begeer et al., 2009), however, the influence of HCPs' experience and the number of symptoms presented in recognition of ASD are yet to be studied. Understanding how these factors influence recognition of ASD in children could help to improve early diagnosis and facilitate better outcomes for ASD interventions.

The current study

The current study aimed to examine whether work experience influenced HCPs ability to recognize ASD. It also examined the impact of the amount of information provided about an ASD on its recognition. Finally, the interaction between work experience and the number of symptoms provided about ASD was examined in relation to recognition of ASD. Due to inconsistent findings from research regarding work experience and clinical judgement (Galanter & Patel, 2005), analyses examining the effect of experience on HCP's recognition of ASD were exploratory. Based on the recent findings (Burke et al., 2016) it was expected that ASD recognition would improve when a number of symptoms presented to HCPs increased. It was further expected that recognition of ASD by HCPs with little experience would be better when many symptoms were presented than when few symptoms were presented.

Method

This research used the data collected for the project called 'De Beoordeling van Psychische Problemen bij Schoolkinderen' (BePPs). The project aimed to study varying child

and professional factors in HCPs' recognition of mental-health disorders in children (Burke et al., 2016).

Participants

Participants were 431 HCPs working in different mental health-care fields in the Netherlands (*N*=431; 384 (89%) women, 47 (11%) men), of which 89% were Dutch. All participants were ranging from 18 years old to above 60. Of the participants, 125 (29%) were psychologists, 91 (21%) were pediatricians, 91 (21%) were pedagogues (professionals with a master's degree in child development, working in child mental health, growth and development settings), 52 (12%) were social workers, 34 (8%) were teachers and school mentors and 17 (4%) were psychiatrists. The remaining 21 participants (5%) were working in non-care related fields such as policymakers and lecturers. This group was not included in the analyses. The work experience of participants varied from 0 to more than 20 years. See table 1 for demographic characteristics of the participants.

Procedure

An advertisement was published on employee websites and online news platforms entitled *Evaluating School Children with Mental-Health Problems*. The goal of the study was clearly indicated as the role of HCPs during the initial evaluation of children. The advertisement included a link to an online survey. Participation was not paid or rewarded. All participants consented to use of the collected data. Before the survey started, instructions appeared on the screen. The instructions explicitly stated that vignettes did not provide all information required to make a diagnosis but that they would trigger a first impression, and that is what the researchers were interested in. HCPs demographic information was requested on the first page. On the pages that followed 10 vignettes were displayed, 1 per page. At the end of every vignette, participants

were asked if they recognized a problem with the child described in the vignette. Proceeding to the next page meant no return to the previous page, that is, the answer on the previous page was irreversible. Finally, information was requested about participants' occupation and experience as a HCP (Burke et al., 2016).

Measures

A questionnaire was developed by Burke et al (2016), consisting of 10 vignettes which described symptoms of the following disorders; Generalized Anxiety Disorder (GAD), Major Depressive Disorder (MDD), Conduct Disorder (CD), ADHD and ASD. The symptoms described for each disorder were based on the DSM-IV criteria for each disorder (APA, 2000). Each disorder described equal symptomatology to provide an equal opportunity for HCPs to recognize different problem types. Age, ethnicity, socioeconomic status, and gender of the child were manipulated in each vignette. The number of symptoms presented was systematically varied and randomly presented to the HCPs. As a result of the combinations of variables, 400 vignettes were created; 10 vignettes were combined to form a survey. A total of 40 surveys were formed. There were 2 vignettes describing each of the problem types. Surveys were randomly presented to participants (Burke et al., 2016). Since the current study examined the potential effects of the number of symptoms and HCPs' work experience on recognition of ASD, only data related to the variables *number of symptoms, work experience* and *ASD* vignettes were used.

ASD vignettes. The DSM-IV-TR (APA, 2000) guided the creation of the ASD vignettes. At the time of the study DSM-5 (APA, 2013) was yet to be published, so the DSM-IV-TR was most likely to be the most popular among HCPs. All criteria that are fixed and necessary to receive an ASD diagnosis were described as symptoms, then the remaining symptoms needed to make either 5 or 10 symptoms were chosen from the optional criteria. Criteria are clustered into

three domains in the DSM-IV (social interactions, communication, and restrictive behaviors); most remaining symptoms were selected from *social interactions* and *communications domains* since both domains are most persistent throughout the course and development of ASD (APA 2013). This means that the first 3 symptoms that were chosen were the fixed criteria, the remaining 2 symptoms necessary to make a vignette with 5 symptoms or 7 symptoms necessary to make a vignette with 10 symptoms were chosen randomly from the domains *social interactions* and *communications.*

Work experience. HCPs indicated years of work experience in their current profession on a 5 points scale of 0-5, 5-10, 10-15, or 20+ years. This categorical variable was treated as a continuous variable since intervals were equal (5 years) and each interval was a continuation of the previous interval.

Number of symptoms. Symptoms were selected from DSM-IV-TR criteria and they varied to include 'few' or 'many'. Few-symptom vignettes described 5 symptoms and many-symptom vignettes described 10 symptoms. For this analysis, `few´ symptoms was coded with 0 and `many´ symptoms was coded with 1.

ASD Recognition. HCP recognition of ASD was measured by posing an open-ended question at the end of each vignette. "Could you indicate whether the situation mentioned above should be a point of concern? And if yes, what do you think is the matter with this child? Answers to this question were coded by a trained researcher as (1) 'recognized' and (0) 'not recognized'. All responses that explicitly named ASD or any category of pervasive developmental disorder according to DSM-IV-TR (APA, 2000) were considered as recognized.

Twenty percent of vignettes were randomly selected for coding by a second, independent rater. Reliability analysis, using the kappa statistic were calculated using IBM SPSS statistics

Table 1

Descriptive Statistics and Demographic Characteristics of the Participants

Characteristics	N	%
Gender		
Male	43	10.0
Female	383	88.9
Missing	5	1.2
Age		
18-24	10	2.3
25-39	159	36.9
40-59	222	51.5
60+	39	9.0
Missing	1	0.2
Profession		
Psychologist	127	29.5
Pedagogue	90	20.9
Psychiatrist	18	4.2
Pediatrician	89	20.6
Teachers/school mentors	33	7.7
Social workers	52	12.1
Work experience		
0-5 years	106	24.6
5-10 years	92	21.3
10-15 years	74	17.2
15-20 years	53	12.3
20+ years	106	24.6

Ethnicity		
Dutch	376	87.2
Non Dutch	51	11.9
Missing	4	0.9

version 24 (IBM corp., 2016) to determine the agreement of coding amongst two raters. The inter-rater reliability for all ASD vignettes was found to be κ=1.00 (p< .00), indicating a perfect agreement between the two raters.

Statistical Analyses

To examine the research questions and test hypotheses, a binary logistic regression analysis was conducted. Binary logistic regression was the most appropriate analysis for this study because the expected outcome (*ASD recognition*) is dichotomous (Field, 2013). This dependent variable is measured on a nominal scale. The predictor variables are *work experience,* a continuous variable measured on an ordinal scale, and *number of symptoms,* a categorical variable measured on a nominal scale. The latter is also the moderator variable. Multicollinearity, linearity of logit, and outliers were checked prior to analyses.

Additionally, descriptive statistics were calculated. For the analyses, a model without predictor variables was first tested, followed by a model with predictor variable (*work experience*), then a model with the second predictor (*number of symptoms*) and finally the interaction term (*work experience* x *number of symptoms*) was included in the model. Since the analysis was done hierarchically, the enter method was opted for since it is the most appropriate method for theory testing and ensures replicability of data testing (Field, 2013). All analyses were conducted using *IBM SPSS Statistics 25.*

Results

Before hypotheses testing, descriptive statistics were calculated for the variables of interest. Of the 431 participants who evaluated 862 ASD vignettes, 106 (25%) had 0-5 years' work experience, 92 (21%) had 5-10 years' work experience, 74 (17%) had 10-15 years' work experience, 53 (12%) had 15-20 years' work experience and 106 (25%) had more than 20 years of work experience. Of the ASD vignettes that were evaluated, 431 (50%) described few symptoms of ASD, the remainder 431 (50%) described many symptoms of ASD. Regardless of the professionals' years of work experience or the number of symptoms described in the vignette, 505 (59%) of children with ASD were recognized; the remaining 357 (41%) of the vignettes describing children with ASD were not recognized as having the disorder.

Prior to the main analyses, the assumption of multicollinearity was checked and they were no correlations between the predictors found. The linearity of logit was not problematic as it revealed a non-significant interaction term (*p=ns)*. There were no outliers detected, all the standardized residual cases were less than two (Field, 2013). The assumption of independence of errors was violated because each participant evaluated ten vignettes. However, it was beyond the scope of this study to control for the nested element of the data. This may weaken the analyses (Allen & Bennet, 2014). Therefore, results must be interpreted with caution.

In order to test the study's hypotheses, a binary logistic regression was conducted with 3 models; specifically, a constant model without predictors, a second model including main effects, and a third model including main effects plus an interaction term. The model without predictors was able to correctly predict 59% of the recognized vignettes by estimating that all the vignettes were recognized. When the predictors were (block-wise) added to the constant model, the second model, that included *work experience* and *number of symptoms* was a significantly better fit for the data, $\chi 2$ (*df=2, N*=862)=337,25, $p < .001$, Cox and Snell R^2=57, Nagelkerke R^2=

.44. The model was 80% accurate in its prediction of recognition of ASD. Hosmer and Lemeshow test results confirmed that the model was a good fit for the data, $\chi 2$ (*df=8, N*=862) = 8.80, *p* = .36. Adding the interaction term (work *experience* x *number of symptoms*) to the second model did not improve the model significantly (Wald= 1.91, $\chi 2$ (*df=3, N*=862) =339.17, *p = ns*). Furthermore, the hypothesis proposing the interaction effect of the predictors to the outcome has no strong theoretical basis. For these reasons, the interaction term, was excluded from the final analysis and all coefficients are reported from model 2.

Hypothesis 1: *"The amount of work experience will predict the recognition of ASD"*

As shown in Table 2, model 2 included the predictors *work experience* and *number of symptoms*. The main effect of *work experience* on HCP's ability to recognize ASD was not significant, Wald = .28, $\chi 2$ (*df=1, N*=862) = .18, *p=ns*. This means that the years of work experience a HCP has does not predict their recognition of ASD. ASD was recognized by 102 (23%) of HCPs with 0-5 years of work experience, by 79 (18%) of HCPs with 5-10 years of work experience, by 64 (15%) of HCPs with 10-15 years of work experience, by 49 (11%) of HCPs with 15-20 years of work experience, by 91(21%) of professionals with more than 20 years of work experience. The first hypothesis was not supported by these findings.

Hypothesis 2: *"Recognition of ASD will improve when the number of symptoms presented to HCPs increases"*

The effect of number of symptoms on the recognition of ASD was significant, Wald= 251.59, $\chi 2$ (*df=2, N*=862) =337.25, *p* < .001, see Table 2. When the number of symptoms presented increased, the frequency of ASD recognition increased. When few symptoms were described in 431 vignettes 125 (29%) of the vignettes was recognized. Recognition of ASD vignettes increased to 380 (88%) when many symptoms were presented. Only 12% of the

Table 2

Coefficients of the Model Predicting ASD Recognition based on Work Experience and the Number of Symptoms Presented.

			95% CI for Odds Ratio		
Predictors	B (SE)	Wald	Lower limit	Odds Ratio	Upper Limit
Constant	-.81 (.20)	17.01		.45	
Work experience	-.03 (.06)	.28	.87	.97	1.08
Many symptoms[a]	2.91 (.18)*	251.59	12.75	18.26	26.15

Note. Reference category= [a]few symptoms, N=862. *p < .001, CI = Confidence Interval

vignettes were not recognized. The odds ratio indicated that when many symptoms of ASD were presented, an individual with ASD was 18.26 times more likely to be recognized than when few symptoms were presented. These findings support the second hypothesis.

Hypothesis 3: *"Recognition of ASD by HCPs with little experience will be better when many symptoms are presented than when few symptoms are presented."*

As outlined above, the relationship between a professionals' work experience and their recognition of ASD vignettes was not moderated by the number of symptoms described in the vignette, Wald= 1.91, $\chi 2$ (df=3, N=862) =339.17, p = ns). When ASD is described with few symptoms, 31 (25%) of vignettes were recognized by professionals with 0-5 years' work experience, 27 (21%) of vignettes were recognized by professionals with 5-10 years' work experience, 16 (13%) of vignettes were recognized by professionals with 10-15 years' work experience, 19 (15%) of vignettes were recognized by professionals with 15-20 years' work experience, 32 (25%) of vignettes were recognized by professionals with more than 20 years'

work experience. When ASD is described with many symptoms, 100 (26%) of vignettes were recognized by professionals with 0-5 years' work experience, 78 (20%) of vignettes were recognized by professionals with 5-10 years' work experience, 64 (17%) of vignettes were recognized by professionals with 10-15 years' work experience,47 (12%) of vignettes were recognized by professionals with 15-20 years' work experience, 91 (24%) of vignettes were recognized by professionals with more than 20 years' work experience. The results do not support the third hypothesis.

Discussion

The aims of this study were to examine whether work experience influences HCPs ability to recognize ASD, the impact of the amount of information provided about an ASD on its recognition and the interaction between work experience and the number of symptoms provided about ASD in relation to ASD recognition. Results showed that the HCP's work experience did not predict the recognition of ASD. However, recognition of ASD greatly improved when the number of symptoms presented to HCPs increased. Contrary to the third hypothesis, recognition of ASD by HCPs with little experience did not significantly become better when many symptoms were presented than when few symptoms were presented. All results are discussed below.

Results revealed that years of work experience a HCP has do not contribute to HCP's ability to recognize ASD. Although this result is contrary to the hypothesis, it corresponds to some authors' perspective that it is not the experience but knowledge acquired through ASD specific trainings that enables HCPs to effectively recognise disorders (Barnard-Brak, Richman, Ellerbeck, & Moreno, 2017; Norman, 2005). Another possibility could be that the effect of work experience on recognition of ASD is only specific to general practitioners (Unigwe et al., 2017),

and ungeneralizable to other HCP types. Unfortunately, the current study did not control for HCP type. Furthermore, HCPs may have been reluctant to apply their clinical judgment as they do in real practice, in case they did not perceive the vignettes as believable. Believing in information provided about a patient is a crucial step in making clinical decisions (Janz & Becker, 1984). In reality, HCPs might be more challenged to apply their decision-making skills and recognition delaying habits. However, literature regarding the relationship between work experience and clinical-judgement is inconsistent. Future research should address these inconsistencies.

As expected, presenting HCPs with many symptoms of ASD increased their ability to recognize ASD. This is in line with previous findings (Burke et al., 2016). When many symptoms are described, ASD may easily be distinguished by HCPs, as symptoms may evidently correspond with the three symptom domains of ASD (APA, 2000). Moreover, being presented with many symptoms may increase a HCP's degree of certainty regarding ASD recognition and elimination of other potential disorders becomes evident (McConaughy, 2013). However, this study shows that the distinct domains of ASD may only aid its recognition in cases when many symptoms are presented to the HCPs.

Contrary to the expectation, ASD recognition among HCPs with little experience did not significantly become better when many symptoms were provided. This further demonstrates that work experience may not be relevant in recognition of ASD. However, future research should mainly investigate the plausibility of the theories regarding work experience in the recognition of ASD. To date, there is no empirical evidence showing the relationship between work experience and HCP's ability to recognise ASD, being moderated by the number of symptoms. There could be other HCP specific variables that were not covered in this research.

The results discussed have implications for clinical practice, children with ASD and their families. Firstly, it is found that the level of experience does not contribute to HCPs' ability to recognize ASD. This implies that the likelihood of all trained HCPs to recognise ASD is equal. In general, ASD was poorly recognised. This implies that many children with ASD may be unrecognised and unnecessarily suffering for long. To improve recognition of ASD, HCPs should engage in ASD specific training (AAP, 2001). Secondly, it is known that HCPs' ability to recognize ASD improves when many symptoms are provided by the patient. HCPs should therefore be advised about the risk of underestimating ASD when few symptoms are presented and better recognition when many symptoms are presented. To ensure early recognition, HCPs should ask for more information related to ASD specific symptoms.

Limitations

The sample of HCPs in this study consisted of 90% women. This may suggest an underrepresentation of men. However, the mental health care profession is dominated by women. It would however be interesting to extend this study to male HCPs. Further, vignettes describing a few (5) symptoms did not meet the DSM-IV threshold of ASD diagnosis. This may have limited the HCPs' ability to recognise ASD in few-symptom vignettes. However, in practice, ASD symptomatology varies per child. Thus, the difference in symptom presentation is unlikely to affect the results. Further, it is unclear how recognizing ASD based on the vignettes would translate to the clinical setting where a child is seen physically. HCPs may probably be more responsive to the concerns of their patient when they see them physically than simply reading information about a patient. However, vignettes are presumed to be reliable in measuring clinical decisions, if they are created properly (Evans, 2005). Besides, a patient's physical presence may hinder objective evaluation of the severity of the problem. Finally, the current study did not take

comorbidity into account. This limitation implies that results in the clinical practice may actually be worse than this study revealed, since comorbidity tends to complicate recognition of disorders. Future research should include vignettes that address comorbidity as it is common in children with ASD (APA, 2013).

Conclusion. The present study supports the previous findings in which HCPs frequently recognised ASD when many symptoms were described (Burke et al., 2016). However, this did not hold true for HCPs with little experience. Generally, experience did not predict HCP's ability to recognise ASD. It is important to train all HCPs to ensure early recognition of ASD even in instances when a few symptoms of the disorder are provided.

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