

ARE THERE SEX / GENDER DIFFERENCES IN COMMUNICATION BETWEEN MEN AND WOMEN WITH ASD? REVIEW OF REVIEWS AND META-ANALYSIS

María López Bellés
Tutor: Rosa Ana Clemente Estevan
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INTRODUCTION

Autism Spectrum Disorder (ASD) is a neurodevelopmental disorder characterized by social and communicative impairments, as well as by restricted, repetitive and stereotypical behaviors and interests (RRBI) (DSM-5 American Psychiatric Association [APA], 2013). It is one of the human disorders where the prevalence differentiated by the gender variable is very relevant, being the ratio in the latest research of 4: 1 (Loomes, Hull & Mandy, 2017). Researches have tried to find out the reasons for these differences, focusing on the difficulties in interpersonal communication, since the communicative and social capacities are highly relevant and nuclear characteristics in the diagnosis of the disorder.

In general, the explanation of this discrepancy has been attributed to the possible existence of "two brains": the female brain and the male one. Autism can be considered as an extreme of the male profile, with the male brain being psychometrically defined as the one that is presented by individuals whose systematization is significantly better than their empathy, while the female brain is defined with the opposite cognitive profile (Baron-Cohen, 2002). Other explanations are more social-focused. For example, as described by Attwood (2007), it seems that women with ASD can develop strategies to cope or adapt to certain socially compromised situations, "camouflaging" their symptoms and, therefore, making them unnoticed by observers.

The objective of this review of meta-analysis and reviews is to clarify, in some way, the large amount of information that exists concerning autism and to get to know the most relevant reasons that scientific literature offers to explain these gender differences in communicative behaviors inside ASD.

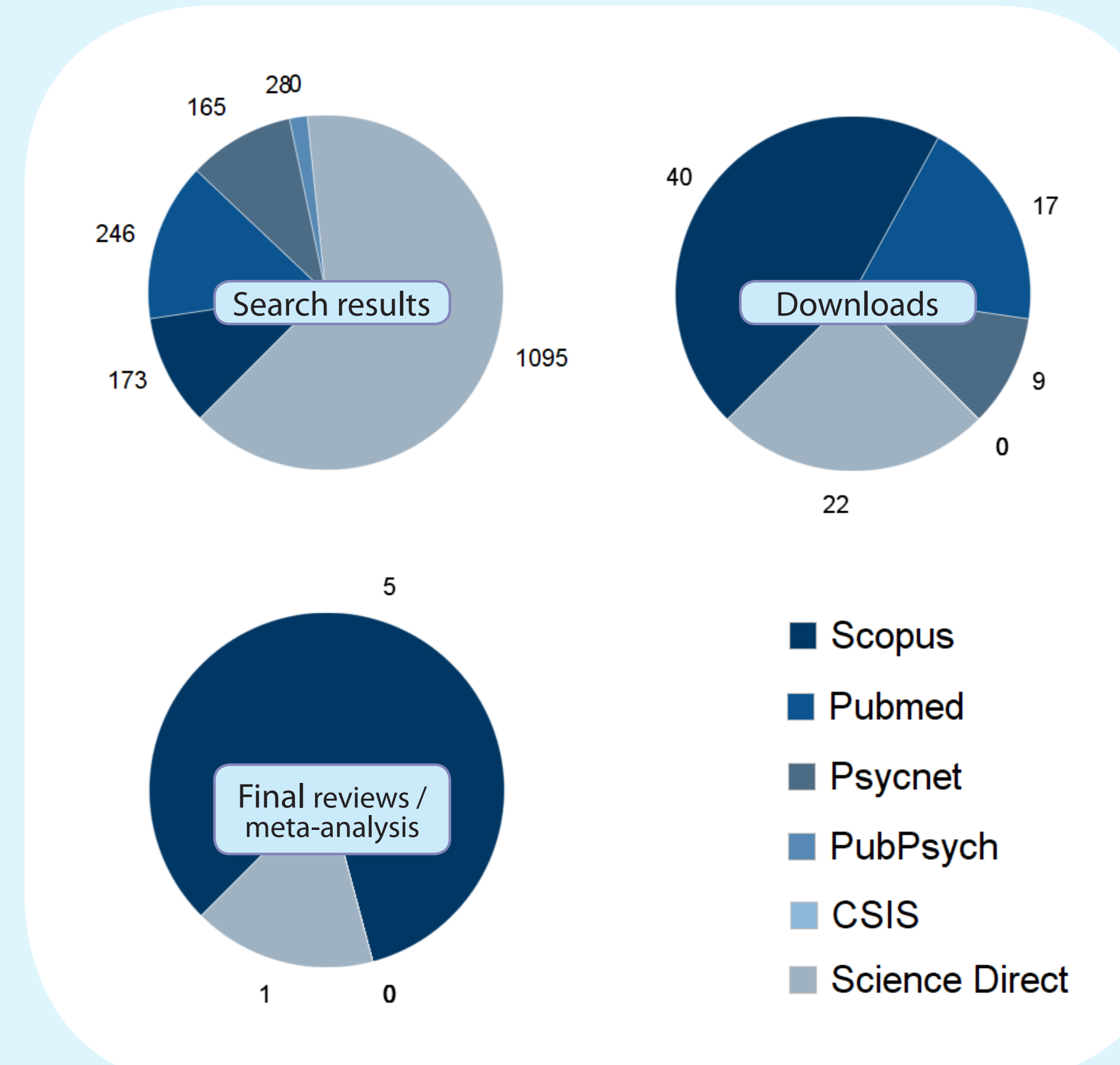
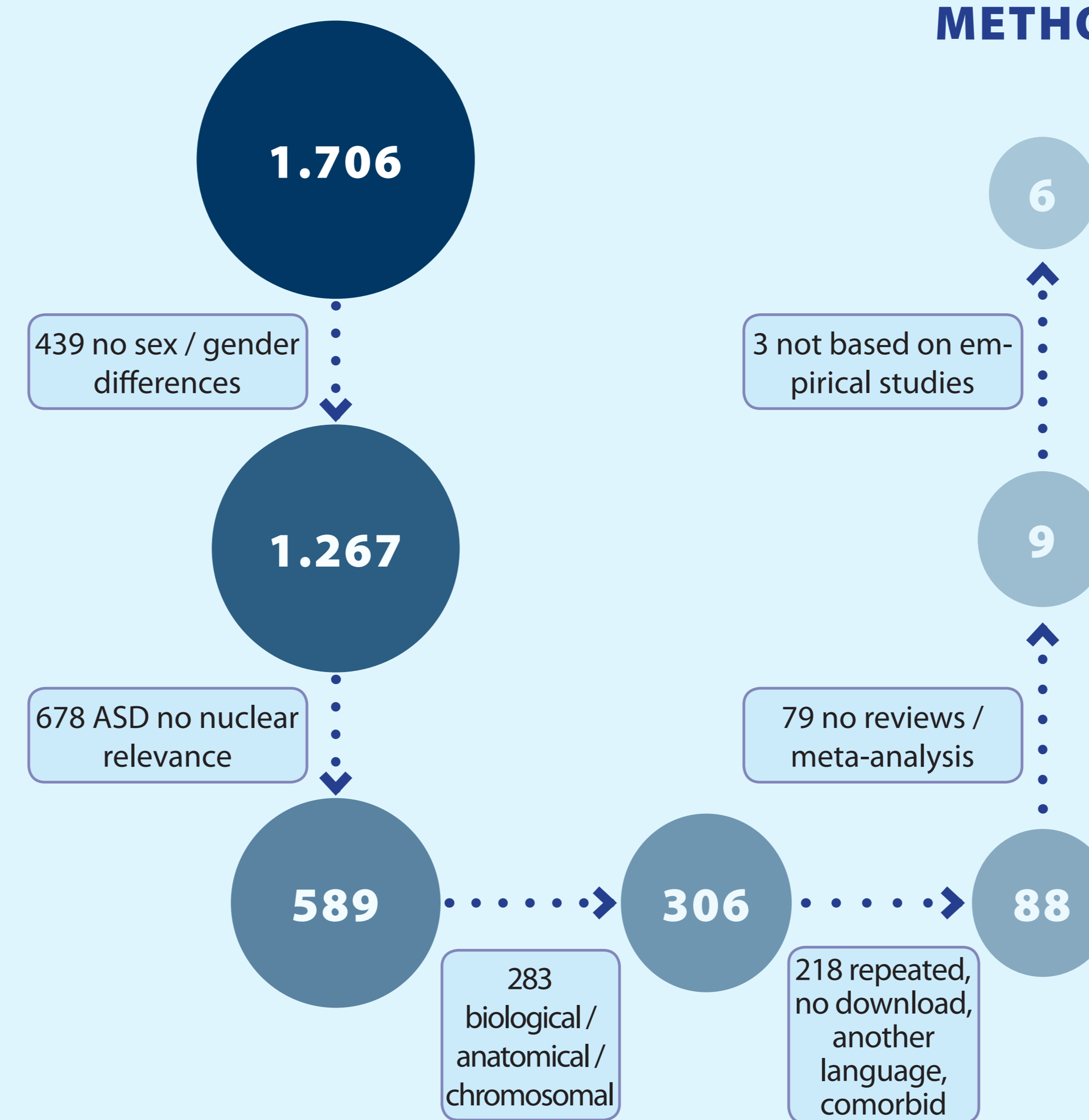
SEARCH

ASD/Autism
Communication
Gender differences
Kids
2010-2018

DATABASES

Scopus
Pubmed
Psycnet
PubPsych
CSIS
Science Direct

METHOD



RESULTS

Review / Meta-analysis	Year	Items	Ratio	Age	Are there differences?	Possible causes	Shared references
1. Kirkovski, Enticott, & Fitzgerald	2013	113	4:1	6 – 36	The literature on the role of gender in communicative capacity in ASD is inconsistent. The (78.8%) support a phenotypic profile altered the triad for affected women.	The strong interest in socialization demonstrated by affected women can again serve to mask the clinical symptoms, since their restricted interests are more socially appropriate than those shown by the affected men.	With 2: 9 With 3: 6 With 4: 2 With 5: 22 With 6: 37 With 3: 7 With 4: 2 With 5: 13 With 6: 20
2. Hull, Mandy, & Petrides.	2017	20	-	ASD:33–381 Typically in development: 3'3–40'5	No significant differences were found in the sex / gender effect between the ASD and typically in development groups.	Due to the reduced amount of contradictory studies and findings in each of these studies, no conclusion can be drawn from major or minor sex / gender differences in ASD social disabilities.	With 4: 0 With 5: 6 With 6: 9
3. Hayward, McVilly & Stokes.	2016	11	2'5:1	18-70 years	The conclusions can not be specifically drawn for women, since they represent only a small component of the total sample (23%, n = 37).	Women may differ from the findings described, as they may have improved social skills and / or a greater ability to camouflage their shortcomings in comparison with their male counterparts.	With 5: 1 With 6: 0
4. Magiati, Tay, & Howlin.	2013	25	-	Initial eval.: 3'9-15'4 Follow-up: 17'5-44	No conclusions can be drawn regarding gender	Very few or no female participation in the studies	With 6: 15
5. Van Wijngaarden-Cremers et al.	2013	63	4'3:1	Young children (0-3), Pre-school children (0-6), Children (6-12), Teenagers (12-18) and adults (18 and older)	There were no gender differences in communication (standardized mean difference) 0.03, IC (Confidence interval) 95% 0.26-0.21)	The risk of ASD is probably multifactorial, with many different genetic variants and environmental factors that contribute to liability. The dose of sex chromosomal gene and sex hormone levels may be involved. The biological theories for sex difference in the prevalence of ASD, even without differences in terms of communication, propose that women have a higher threshold to reach the affected state than men and genetic studies assume that women with ASD have a greater hereditary burden than affected males (Werling & Geschwind, 2013). The underlying mechanisms have not yet been identified.	-
6. Lai, Lombardo, Auyeung, Chakrabarti, & Baron-Cohen.	2015	329	4-5:1	-	The meta-analysis suggests that women on average show social communication difficulties comparable to those of men	Women can, on average, be more prone to camouflage (that is, mask or compensate) their autism, probably imitating social acts, following social scripts and systematizing the social world, hence the lower diagnostic prevalence. The degree to which these patterns of differential sex / gender behavior are modulated by concurrent disorders (ADHD, for example) or cognitive / temperamental characteristics requires further investigation.	-

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Only 3 of the meta-analyses or reviews reach conclusions regarding sex / gender differences in terms of communication, where it is observed that there are no differences, in the case of the 3 reviews / meta-analyses that could not obtain conclusions, it is attributed to the lack of female population in the studies. There is only one study that comments on statistical data, giving a size of the effect of the differences (SMD) of 0'03, so there are no differences. Finally, regarding the ratio, there are 2 reviews / meta-analyses that do not give figures in this regard. Moreover, it is necessary to emphasize that the most recent revisions diminish this difference between sexes / genders.

DISCUSSION

After having carried out the review, 561 articles in total in the 6 reviews / empirical meta-analyses offer the idea that the topic is still under discussion. We observe the difficulty that the study of these differences supposes, since only in 3 of the reviews can conclusions be obtained and 3 agree that there are no differences between men and women.

The explanations given by these conclusive reviews are that women seem to be more able to compensate their autism and that they have to reach a higher threshold in the symptoms to be diagnosed with the disorder, what would explain the lower prevalence. Only one study offers statistical values using the size of the effect, and the comparison data between men and women in the 63 studies used with participants of all ages is of 0.03 (Van Wijngaarden-Cremers et al., 2013). The rest of the reviews / meta-analysis do not offer statistical data for comparison and they comment on the few data provided by women participants to obtain conclusions (Magiati et al., 2013).

Regarding the explanation of the "extremely masculine" brain argued by Baron-Cohen (2002), it is only commented in the review by Lai et al. (2015) although not conclusively, since the authors suggest that women -on average- show social communicative difficulties comparable to those of men. In addition to these possible explanations, future research should take into account the expectations of gender roles based on culture that can lead girls with autism to adopt more intrapersonal processes to modify or "disguise" their behaviors (Kreiser & White, 2014).

LIMITATIONS

- The change in the DSM-5 is very recent, and therefore the denominations of the disorder and what is included in it have varied (for example the Non-specific DSM-IV-R)
- Little attention paid to research on the differential treatment of men and women within the educational system.
- Only one review / meta-analysis includes the effect size