









The impact of asexual trait and porn addiction in a young men healthy cohort

Giorgio Ivan Russo¹  | Daniele Campisi¹ | Marina Di Mauro¹ | Marco Falcone²  | Andrea Cocci³  | Gianmartin Cito³  | Paolo Verze⁴  | Paolo Capogrosso⁵  | Mikkel Fode⁶  | Giovanni Cacciamani⁷ | Giuseppe Morgia^{1,8}  | European Association of Urology Young Academic Urologists (EAU-YAU) Sexual, reproductive Working Group²

¹Urology section, Department of Surgery, University of Catania, Catania, Italy

²Department of Urology, San Giovanni Battista Hospital, Città della Salute e della Scienza and University of Turin, Turin, Italy

³Department of Urology, University of Florence, Florence, Italy

⁴Department of Medicine, Surgery, Dentistry "Scuola Medica Salernitana" – Urology Unit, University of Salerno, Salerno, Italy

⁵Department of Urology, ASST Sette Laghi; Circolo and Fondazione Macchi Hospital, Varese, Italy

⁶Department of Urology, Roskilde, and Department of Clinical Medicine, Zealand University Hospital, University of Copenhagen, Copenhagen, Denmark

⁷University of Southern California Catherine and Joseph Aresty Department of Urology, Los Angeles, CA, USA

⁸Urology Section, Istituto Oncologico Del Mediterraneo (IOM), Viagrande, Italy

Correspondence

Giorgio I. Russo, Urology section, University of Catania, Catania, Italy.
Email: giorgioivan1987@gmail.com

Summary

In the present study, we aimed to evaluate the association between asexual trait, erectile dysfunction (ED) and porn addiction in a community sample of young men. Between August 2019 and October 2019, a total of 559 young male adults were subjected to an online survey sponsored by social networks with the aim of assessing their sexual habits. The following questionnaires were administered: The International Index of Erectile Function (IIEF-5), Masturbation Erection index (MEI), Pornography Craving Questionnaire (PCQ) and Asexuality Identification Scale (AIS). The overall rate of ED according to IIEF-5 was 26.0% (165/478), the rate of ED according to MEI was 16.9% (81/478) and the rate ED in patients with AIS ≥ 23 indicating asexual trait was 10.0% (48/478). We found that IIEF-5 was positively associated with MEI ($b = 0.32$; $p < .01$) and negatively with AIS ($b = -0.36$; $p < .01$) and MEI was negatively associated with AIS ($b = -0.36$; $p < .01$). We found that MEI (odds ratio [OR]: 0.86; $p < .01$) and IIEF-5 (OR: 0.89; $p < .01$) were inversely associated with asexual trait. The presence of asexual trait can hide a greater risk of finding ED both in intercourse or masturbation. These results should be taken into consideration during the general assessment of the patient with sexual problems.

KEYWORDS

asexuality, erectile dysfunction, masturbation, porn addiction, sex

1 | INTRODUCTION

Erectile dysfunction (ED) is considered an age-related disease and one of the most frequent, and in most cases, men develop signs and symptoms of ED after the age of 65 (Sebastianelli et al., 2020)

(Al-Ali et al., 2015). This trend is probably undervalued due to the underestimation of the portion of younger patients (Corona et al., 2010). In a cross-sectional study conducted among men who presented a newly onset episode of ED, one in four patients was less than 40 years old, with nearly 50% of young people

Giorgio I. Russo and Daniele Campisi equally contributed.

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complaining of a severe ED (Capogrosso et al., 2013). On the other hand, epidemiological data on male sexual dysfunction are difficult to collect because patients not necessarily seek physician help (Russo et al., 2019).

Recent studies suggest that erectile function is to be considered a disease with multifactorial pathogenesis, in fact it appears to be associated with multiple risk factors including age, obesity, smoking, alcohol, diabetes, cardiovascular disease or psychological variables (Gul et al., 2021; Mauro et al., 2021; Wan et al., 2021).

In the last years, a recent interest has emerged regarding the relationship between erectile function and pornography, even if controversies still exist (Dwulit & Rzymiski, 2019). Some studies have shown an association between the use of pornography and sexual dysfunctions (AFHSC., 2014; Janssen & Bancroft, 2007), while Grubbs et al showed that among pornography users, self-reported problematic use was associated with concurrent reports of ED, but this link was not directional or causal in nature (Grubbs & Gola, 2019).

Finally, recent data have indicated an hypothetical role of different psychological components that reported sexual function, including asexual trait, defined as the lack of sexual interest (de Oliveira et al., 2020). In the last years, scientific interest on the topic of asexual trait has been growing and asexuals have gained more visibility (Bogaert, 2015; Bogaert et al., 2018; Hille et al., 2020; Van Houdenhove et al., 2015). Until now, a part from a self-labelled definition, only one questionnaire (the Asexuality Identification Scale (AIS)) has been used with the aim to quantify the asexual trait (Brotto et al., 2015).

Based on these premises, the aim of this study was to evaluate the impact of erectile function and porn addiction on asexual trait in a community sample of young men. Secondary aim was to investigate the link between self-induced masturbation and asexual trait.

2 | MATERIALS AND METHODS

Between August 2019 and October 2019, a total of 559 (response rate 89.58%; 559/624) young male adults were subjected to an on-line survey conducted via Google module and by social networks (Facebook, Instagram, Twitter and LinkedIn) with the aim of assessing their sexual habits. The survey was completely anonymous and have been performed only once for a single user. Participants were matched by Internet Protocol and duplicates have been removed from the analysis. The sexual orientation (heterosexual, bisexual, homosexual, other) of the interviewees and daily habits such as cigarette smoking, alcohol consumption, use and/or abuse of narcotic substances, sports habits were preliminarily evaluated. We also assessed the respondents with following variables: age, weight, height, BMI (Body Mass Index), chronic pathologies, drugs intake, relationship status (single or engaged) and the possible presence of past sexual abuse or sexual experiences with important psychological and emotional impact.

To evaluate sexual function, the following questionnaires were administered: The International Index of Erectile Function

(IIEF-5), Masturbation Erection index (MEI), Pornography Craving Questionnaire (PCQ) and Asexuality Identification Scale (AIS).

The IIEF-5 questionnaire was used to evaluate erectile function in men. Severity of ED was classified as follows: 25–22 no erectile dysfunction; 21–17 mild erectile dysfunction; 16–12 mild-moderate erectile dysfunction; 11–8 moderate erectile dysfunction; 7–5: severe erectile dysfunction (D'Elia et al., 2012).

MEI is a questionnaire that assesses the quality of an erection during masturbation. The MEI is composed of six items that specifically investigate the quality of EF in men practicing self-induced masturbation but not necessarily engaging in full sexual intercourse.

This questionnaire involves the use of the quality of erection during masturbation. We classified responders as follows: score <7 severe erectile dysfunction; between 8 and 16 mild to moderate erectile dysfunction; > 16 absence of erectile dysfunction (Limoncin et al., 2019).

The PCQ is a 12-question composite test that aims to assess the possible presence of addiction to pornography. This questionnaire could be applied in clinical settings to plan and evaluate therapy for problematic users of pornography and as a research tool to assess the prevalence and contextual triggers of craving among different types of pornography users.

Each answer is associated with a numerical value ranging from 1 (totally disagree) to 7 (totally agree); there is not overall score, but the corresponding numeric value is evaluated for each answer which, if greater than or equal to 5, indicates dependence for that given domain (Kraus & Rosenberg, 2014).

The AIS is a 12-item questionnaire, a self-report instrument for assessing asexual trait. The questionnaire is intended to provide a valid measure independent of whether the individual self-identified as asexual.

Total AIS scores are calculated by summing responses from all 12 questions. Each answer is associated with a numerical value ranging from 1 (completely false) to 5 (completely true). Higher scores indicate greater tendency to endorse traits that may indicate asexual trait (Yule et al., 2015).

Stable relationship has been defined as the presence of at least 1 intercourse per week in the previous 3 months.

Exclusion criteria were as follows: presence of chronic pathologies including hypogonadism. The survey was conducted in Italian according to the Checklist for Reporting Results of Internet E-Surveys (Eysenbach, 2004) (Table S1).

All participants provided informed consent before enrolment, and the study was conducted in accordance with regulatory standards of Good Clinical Practice and the Declaration of Helsinki (2013).

2.1 | Statistical analysis

Continuous variables are presented as median and interquartile range (IQR) and were compared by the Student independent *t* test or the Mann-Whitney *U* test based on their normal or not-normal distribution, respectively (normality of variables' distribution was

tested by the Kolmogorov–Smirnov test). Correlation tests (Pearson or Spearman) were used to evaluate associations between variables. Categorical variables were tested with the chi-square test. Patients were dichotomised based on the IIEF-5 score in patients with ED (score <22) and without ED (score ≥22). We classified MEI responders as follows: score ≤7 severe erectile dysfunction; between 8 and 16 mild to moderate erectile dysfunction; >16 absence of ED. PCQ responders were dichotomised by taking the cut-off of 5 for each question, considering scores ≥5, measure of passionate attachment for pornography. In addition, participants were divided into 2 groups according to the 90° percentile of AIS (cut-off 23) to determinate trend of asexual trait. Multivariate logistic regression analysis was performed to identify independent predictors of ED and asexual trait.

Cronbach's alpha, α (or coefficient alpha), was applied to measure reliability, or internal consistency of questionnaires.

All statistical analyses were completed using SPSS version 17 Statistical Package for Social Science. SPSS Inc. Released 2008. SPSS Statistics for Windows, Version 17.0. (SPSS Inc.). For all statistical comparisons, a significance level of $p < .05$ was considered.

3 | RESULTS

The final cohort was represented by a total of 478 young Italian men, while 81 patients were removed from the analysis because patients with chronic disease. Table 1 shows the basic characteristics of the population that responded to our survey. The median age was 24 (interquartile range [IQR]: 21–30) years old; the median BMI was 23.46 (IQR: 21.95–25.60) kg/m²; 200 (41.8%) persons were smokers; 151 (31.6%) subjects did not practice physical activity; 145 (30.3%) persons were not in stable relationships; 31 (6.5%) subjects have been sexually abused; 436 (91.2%) persons were heterosexuals, 25 (5.2%) subjects were homosexuals, 14 (2.9%) persons were bisexuals and 3 (0.6%) persons did not have a specific sexual orientation. The median IIEF-5 was 23 (IQR: 19–25), the median MEI was 20 (IQR: 18–21) and the median AIS was 15 (IQR: 13–18) (table 1).

The overall rate of ED according to IIEF-5 was 26.0% (165/478), the rate of ED according to MEI ≤7 was 0.65% (3/154) and to MEI between 8 and 16 was 33.77% (52/154); the rate ED in patients with AIS ≥23 indicating asexual trait was 23.4% (36/154) respect to 3.8% of patients without ED (12/313) ($p < .01$) (Table 2 and Figure 1).

The Cronbach alpha reliability test was as follow: IIEF-5 (0.91), MEI (0.77), PCQ (0.80) and AIS (0.84).

At the age adjusted linear regression analysis, we found that IIEF-5 was positively associated with MEI ($b = 0.32$; $p < .01$) and negatively with AIS ($b = -0.36$; $p < .01$) and also MEI was negatively associated with AIS ($b = -0.36$; $p < .01$).

Table 3 shows the bivariate Spearman's correlation between PCQ single questions and AIS, MEI and IIEF-5. We found significant negative correlation between PCQ items (1, 2, 3, 5, 7, 8,9,10) and AIS, while a positive correlation between PCQ question 1 (The thought of watching porn makes me sexually aroused) and IIEF-5 and MEI. However, all association were low.

TABLE 1 Demographic characteristics of the all cohort

	N = 478
Age, years median (IQR)	24 (21–30)
Height, cm median (IQR)	177 (172–181)
Weight, kg median (IQR)	74 (67–81)
BMI, kg/m ² median (IQR)	23.46 (21.95–25.60)
Sexual orientation, n (%)	
Heterosexual	436 (91.2)
Homosexual	25 (5.2)
Bisexual	14 (2.9)
Other	3 (0.6)
Smoking, n (%)	
Yes	200 (41.8)
No	278 (58.2)
Alcol abuse, n (%)	
Yes	78 (16.3)
No	400 (83.7)
Drugs abuse, n (%)	
Yes	152 (31.8)
No	326 (68.2)
Physical activity, n (%)	
Yes	327 (68.4)
No	151 (31.6)
Stable couple relationship, n (%)	
Yes	333 (69.7)
No	145 (30.3)
Sexually abused, n (%)	
Yes	31 (6.5)
No	447 (93.5)
IIEF-5, median (IQR)	23 (19–25)
IIEF-5, n (%)	
22–25: no erectile dysfunction	313 (74.0)
21–17: mild erectile dysfunction	56 (13.2)
16–12: mild-moderate erectile dysfunction	16 (3.8)
11–8: moderate erectile dysfunction	10 (2.4)
7–5: severe erectile dysfunction	28 (6.6)
MEI score, median (IQR)	20 (18–21)
MEI score, n (%)	
≤7: severe erectile dysfunction	3 (0.6)
8–16: mild-moderate erectile dysfunction	78 (16.3)
≥17: absence of erectile dysfunction	397 (83.1)
AIS, median (IQR)	15 (13–18)
Asexuals, n (%)	48 (10.0%)

Abbreviations: AIS, Asexuality Identification Scale; BMI, Body Mass Index; IIEF-5, International Index of Erectile Function-5; IQR, interquartile range; MEI, Masturbation Erection Index.

At the multivariate logistic regression analysis, we found that MEI (odds ratio [OR]: 0.86 [95%CI 0.78–0.95]; $p < .01$) and IIEF-5 (OR: 0.89 [95%CI 0.86–0.92]; $p < .01$) were inversely associated with

Population <i>n</i> = 478	Erectile function By IIEF-5		<i>p</i> value
	No ED (<i>N</i> = 313), <i>n</i> (%)	ED (<i>N</i> = 154), <i>n</i> (%)	
MEI, (%)			
≤7: severe erectile dysfunction	0 (0.0)	3 (0.65)	<.01*
8-16: mild-moderate erectile dysfunction	26 (8.3)	52 (33.77)	
≥17: absence of erectile dysfunction	287 (91.7)	99 (64.29)	
AIS, <i>n</i> (%)			
<23	301 (96.2)	118 (76.6)	<.01*
≥23	12 (3.8)	36 (23.4)	

Abbreviations: AIS, Asexuality Identification Scale; ED, erectile dysfunction; IIEF-5, International Index of Erectile Function-5; MEI, Masturbation Erection Index.

*Chi-square test

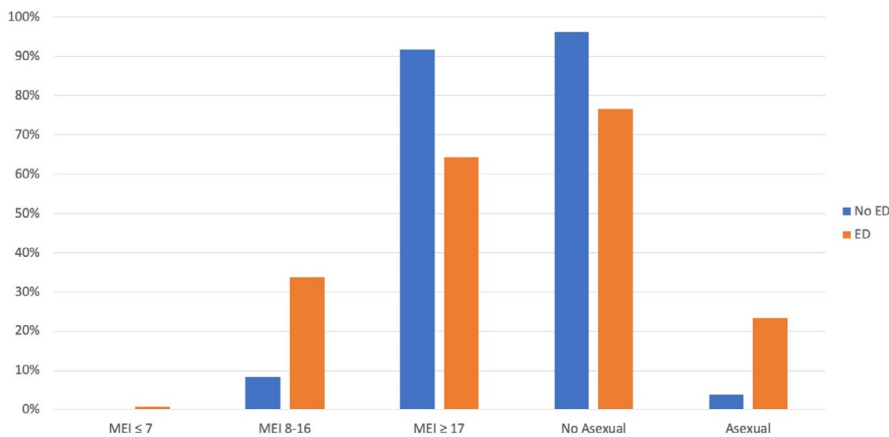


TABLE 2 Prevalence of erectile dysfunction according to MEI and AIS questionnaires

FIGURE 1 Distribution of Masturbation Erection index and asexuality trait according to the presence of erectile dysfunction

asexual trait after adjusting for age, alcohol abuse, drugs abuse and smoking (table S2).

4 | DISCUSSION

Herein, we reported a significant association between erectile function both in the penetrative phase and during masturbation and asexual trait. The main strength of our study is the use of validated questionnaires exploring different aspects of erectile function in different contexts, that of penetration (IIEF-5) and that of masturbation (MEI) and asexual trait. Although that associations were low (*p*-correlation test less than .3), they may arise important issues since the relative lack of data on asexual trait in the existing literature.

Porn addiction has been associated with potential effects in humans. Several studies have assessed the impact of pornography use on sexual function. In fact, masturbation during porn use may interfere with normal intercourse, with consequences on interest in normal intercourse due to altered expectations, altered stimulation patterns with excessive masturbation leading to ejaculatory

dysfunction and diminished erections during intimacy with a partner (Park et al., 2016).

A recent network Survey of Sexual Function and Pornography showed that men used pornography significantly more frequently than women (81.1% vs. 39%) and there was no association between IIEF-5 and craving for, or obsessive passion for, pornography. However, masturbation with pornography increased the risk of sexual dysfunction significantly when compared with partnered sex. In fact, rates of ED were lowest in those preferring partnered sex without pornography (22.3%) and increased significantly when pornography was preferred over partnered sex (78%) (Berger et al., 2019). Joshua et al. examined erectile functioning of a series of three samples of sexually active men who also used pornography: a cross-sectional sample of undergraduate men in the United States, an online sample of men derived from a larger sample that was matched to U.S. nationally representative norms, and a 1-year, 4-wave longitudinal sample of adult men derived from an online convenience sample. Their results showed little or no evidence of an association between mere pornography use and ED (Grubbs & Gola, 2019). Accordingly, Landripet et al. analysed the relationship between pornography use and ED among younger heterosexual men using four

TABLE 3 Bivariate correlation between PCQ single questions and presence of Asexuality or erectile dysfunction

	AIS	IIEF-5	MEI
	Coefficient [†]	Coefficient [†]	Coefficient [†]
PCQ			
1. The thought of watching porn makes me sexually aroused	-0.21*	0.08*	0.13*
2. I would feel less bored if I watched porn right now	-0.12**	0.06	0.11*
3. Right now, I am making plans to watch porn	-0.11**	-0.06	0.04
4. If I were watching porn this minute, I would feel energised	-0.05	0.02	0.06
5. If I were watching porn this minute, I would feel happier	-0.06*	0.03	0.06
6. If I watched porn right now, I would have difficulty stopping	-0.03	-0.03	-0.1
7. I have an urge to watch porn right now	-0.09**	0.01	0.05
8. If the situation allowed, I would watch porn right now	-0.1**	0.03	0.06
9. I will watch porn as soon as I get the chance	-0.06*	0.01	0.03
10. I would feel less stressed if I watched porn right now	-0.13**	0.3	0.1*
11. My heart would beat faster if I were watching porn right now	0.01	-0.05	0.01
12. I want to watch porn right now	-0.01	-0.01	-0.05

Abbreviations: AIS, Asexuality Identification Scale; IIEF-5: International Index of Erectile Function-5; MEI: Masturbation Erection Index; PCQ: Porn carving questionnaire.

* $p < .05$; ** $p < .01$

[†]Spearman correlation

large-scale online samples from three European countries and found that pornography does not seem to be a significant risk factor for younger men's desire, erectile or orgasmic difficulties (OR = 0.53, $p < .01$)(van Lankveld et al., 2015) (Landripet & Štulhofer, 2015).

Also, we found an association between erectile function assessed by IIEF-5 and assessed by MEI, ($p < .01$). Further, we find a positive association between porn addiction and erectile function, suggesting in our cohort a normal balancing between sexual activity, masturbation and pornography. On the other hand, we showed an association between asexual trait, investigated by the AIS, and the occurrence of ED, as assessed in two different contexts: penetration (IIEF-5) and masturbation (MEI). These findings highlight the importance of considering both aspects of erectile function, suggesting the importance of psychological assessment of erectile function.

It is important to notice that people with asexual trait may have significantly lower sexual desire than non-asexuals, including those with sexual interest/desire dysfunction, but no distress unlike those presenting with sexual dysfunction (Brotto et al., 2010).

Finally, to summarise our findings, we detected a non-negligible rate of young men suffering from asexual trait. This finding may also have an influence on erectile function reported by patients, both in terms of penetrative relationships and with masturbation.

This study is not devoid of limitation. First, as a web-based survey the reliability of these data may be questioned, although the observed rate of ED, for instance, is in line with previously published findings. In particular, the survey was spread through internet channel of the University without a random selection of subjects and this could have determined a selection bias. Second, there could be a selection bias especially affecting the rate of porn addiction, since usual web surfers may be more inclined to online pornography. Moreover, AIS and PCQ need Italian validation in order to verify their reliability. We would also highlight, among limitations, that our definition of stable relationship could be not totally representative of a relationship and we lack of psychological assessment, since the cohort was made of healthy people. Finally, our study lacks of complex investigation in all population ages and of the response rate. Larger studies should be performed to confirm our findings.

5 | CONCLUSION

Sexual function in young people is complex and may be affected by several issues, including erectile function, porn addiction and asexual trait. The presence of asexual trait can hide a greater risk of

finding erectile dysfunction both in the penetrative phase and during masturbation.

Although some limitations should be taken into account, our findings highlight for the first time the relationship between asexual trait and erectile function. These results should be taken into consideration during the general assessment of the patient with sexual problems.

CONFLICT OF INTEREST

None.

DATA AVAILABILITY STATEMENT

The data presented in this study are available on request from the corresponding author.

ORCID

Giorgio Ivan Russo  <https://orcid.org/0000-0003-4687-7353>

Marco Falcone  <https://orcid.org/0000-0003-1101-892X>

Andrea Cacci  <https://orcid.org/0000-0003-0138-6294>

Gianmartin Cito  <https://orcid.org/0000-0001-7526-4025>

Paolo Verze  <https://orcid.org/0000-0002-3789-8227>

Paolo Capogrosso  <https://orcid.org/0000-0003-2347-9504>

Mikkel Fode  <https://orcid.org/0000-0002-8963-4581>

Giuseppe Morgia  <https://orcid.org/0000-0002-7224-7577>

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SUPPORTING INFORMATION

Additional supporting information may be found online in the Supporting Information section.

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