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Carla Patrícia Carvalho Peixoto

The evolution of sexual patterns in medical students and its predictive factors – a single institution study in Portugal

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The evolution of sexual patterns in medical students and its predictive factors – a single institution study in Portugal

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Faculdade de Medicina da Universidade do Porto, 15/03/2012

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The evolution of sexual patterns in medical students and its predictive factors – a single institution study in Portugal

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Abstract

Introduction: Sexual behaviour of medical students has been the target of many studies. Although they represent a healthy young population, the physical, emotional and mental strain they are subjected to, may affect negatively their sexuality.

Aim: To assess the prevalence of risky behaviour, sexual behaviour and sexual dysfunctions in Portuguese medical students.

Methods: Students of the Faculty of Medicine of Universidade do Porto were divided into three groups according to the year they are enrolled in: group 1 (1^{st} and 2^{nd} year, n=288), group 2 (3^{rd} and 4^{th} year, n=267) and group 3 (5^{th} and 6^{th} year, n=250). The students filled in an anonymous and confidential questionnaire about sexuality and risky behaviour. The frequency distribution and the Chi-square Test were used to analyse categorical variables. Spearman's Correlation was used to analyse continuous variables.

Main outcome measures: The evaluation of risky behaviour and sexual dysfunctions in medical students based on a questionnaire.

Results: A total of 805 students answered the questionnaire (female=547, male=258), with the median age of 20 years. Regarding marital status, 51.1% were single, 47.1% were in a long-term relationship and 1.8% were married. The median age of the first sexual experience was 17 years, but 33.9% of the students denied having any sexual experience. The most common sexual practice is the joint practice of oral and vaginal sex (56.2%). Ejaculatory dysfunction was the sexual dysfunction most referred by men (18.2%), followed by erectile dysfunction (7.8%), particularly when associated to drugs consumption (22.2%). The sexual dysfunctions most mentioned by women were dyspareunia (40.8%), difficulty attaining an orgasm (34.7%) and lack of lubrication (18.5%).

Conclusions: Although this study is very inclusive, further studies are needed in this area in order to evaluate the sexual patterns amongst the general population and allow comparison with medical students.

Key Words: Sexuality; Medical Students; Sexual Dysfunctions; Sexual Practices; Contraception

Resumo

Introdução: O comportamento sexual dos estudantes de medicina tem sido alvo de muitos estudos. Apesar de representarem uma população jovem e saudável, a tensão física, emocional e mental a que estão submetidos, pode afetar negativamente a sua sexualidade.

Objetivo: Avaliar a prevalência de comportamentos de risco e de disfunções sexuais nos estudantes de medicina portugueses.

Materiais e Métodos: Os estudantes da Faculdade de Medicina da Universidade do Porto foram divididos em três grupos de acordo com o ano em que estão matriculados: grupo 1 (1º e 2º anos, n=288), grupo 2 (3º e 4º anos, n=267) e grupo 3 (5º e 6º anos, n=250). Os estudantes preencheram um questionário anónimo e confidencial sobre sexualidade e comportamento de risco. A distribuição de frequências e o Teste do Qui-quadrado foram utilizados para analisar as variáveis categóricas. A Correlação de Spearman foi utilizado para analisar variáveis contínuas.

Resultados: Um total de 805 alunos respondeu ao questionário (sexo feminino=547, sexo masculino=258), com uma média de idade de 20 anos. Quanto ao estado civil, 51,1% eram solteiros, 47,1% estavam envolvidos num relacionamento estável e 1,8% eram casados. A idade média da primeira experiência sexual foi de 17 anos, sendo que 33,9% dos estudantes negaram ter qualquer experiência sexual. A prática sexual mais comum é a prática conjunta de sexo oral e vaginal (56,2%). A disfunção ejaculatória foi a disfunção sexual mais referida pelos homens (18,2%), seguida da disfunção erétil (7,8%), principalmente quando associado ao consumo de drogas (22,2%). As disfunções sexuais mais referidas pelas mulheres foram a dispareunia (40,8%), a dificuldade em atingir o orgasmo (34,7%) e a dificuldade na lubrificação (18,5%).

Conclusão: Embora este estudo seja muito abrangente, são necessários mais estudos nesta área, de forma a avaliar os padrões sexuais da população geral, permitindo, assim, a comparação com os estudantes de medicina.

Palavras-chave: Sexualidade; Estudantes de medicina; Disfunções sexuais; Práticas sexuais; Contraceção

Introduction

The high level of exigency of medical schools and the struggle for the acquisition of knowledge and skills required for patients care may fully overtake those that choose a medical career [1]. It is also at this stage of life that most people experience the peak of their sexual activity [2-4]. Medical students represent a healthy young population, in which sexual dysfunctions are not expected. However, the physical, emotional and mental strain to which they are subjected may affect negatively their sexuality [5].

Concerns with sexual health are relatively common, emerging to about 10-52% of men and 25-63% of women [6]. In this perspective, some studies were performed over 40 years ago with the intent of analysing the anxiety and the preoccupations related to the sexuality of medical students [7, 8]. Recently this subject has had increasing emphasis, with the publication of several articles that portray the sexual life and risky behaviour of this particular group of students [5, 9-13]. Women seem to have less sexual experience than men, engaging in intimate relationships less frequently [5]. Furthermore, younger students also have less sexual experience than the students in more advanced years, as well as in comparison with the medical residents [9, 14]. Regarding sexual dysfunctions, women refer essentially to dyspareunia (39%), problems in attaining an orgasm (37%) and hypoactive desire (32%) [5]. Men report sexual dysfunctions in 28% of the cases, the main complaint being ejaculatory disorders [5].

We aim to establish the sexual differences between the students of both genders throughout their medical degree. Additionally it sought to evaluate the prevalence of risky behaviour and sexual dysfunctions in this community, and to analyse in which way students' sexual patterns are influenced by sociocultural determinants.

Materials and methods

Our study was conducted at Faculty of Medicine of Universidade do Porto (FMUP), located in northern Portugal. Students are allocated at one of the eight medical schools of the country according to the *"numerus clausus"* (maximum number of students that can attend an educational institution), which implies achieving very high academic results in high school.

The sample included students that attended any one of the six years of the medical degree of FMUP. The students were asked to fill out a questionnaire about sexuality and risk behaviour (appendix) that was distributed to them on paper by the class representative. Confidentiality and anonymity were assured through the use of envelopes that were properly sealed before being handed in. So as to maximize response rates, students were approached during classes to inform them about the purpose of the study and to alert them to the future gathering of the questionnaire.

Data was collected for three months (between September and November of 2011). Students were divided into three groups, according to the academic year that they were attending to during 2011/2012 (group 1 – 1st and 2nd year students; group 2 - 3rd and 4th year students; group 3 – 5th and 6th year students). The exclusion criteria were: damaged questionnaires, questionnaires handed in blank, questionnaires with less than 50% of the questions answered and with incoherent answers. The variable "sexual satisfaction" was subdivided into three categories according to the attribution of points given by the students: low sexual satisfaction (scores between 0 and 4), intermediate sexual satisfaction (scores between 5 and 7) and maximum sexual satisfaction (scores between 8 and 10), on questions 18 and 12 of the male and female questionnaires, respectively.

With regard to marital status, students were considered to be single when they were not involved in any intimate relationship and they were considered to be in a long-term relationship when they had a boyfriend/girlfriend.

For statistical analysis we used SPSS version 16.0 for Windows. The frequency distribution and Chi-square (with Yates correction if indicated) were obtained for demographic, behavioural and sexual characteristics that represented categorical variables. Spearman's Correlation was used to evaluate the association between two continuous variables. The results were considered statistically significant if $P < 0.05$. Sex, marital status and academic year were interpreted as possible confounding factors.

Main outcome measures

The main outcome measures of this study are behavioural and sexual data based on a questionnaire and the evaluation of sexual dysfunctions in medical students.

Results

A total of 861 questionnaires were gathered, which corresponds to 51.6% of the students that attend FMUP. In accordance to the exclusion criteria defined, 56 questionnaires were excluded.

Of the students who participated in the study 35.8% were allocated to group 1 (n=288), 33.2% to group 2 (n=267) and 31.0% to group 3 (n=250). Overall, 68.0% were female (n=547) and 32.0% were male (n=258). This female predominance is consistent with the distribution of the genders in this faculty. The response rate by gender specific was 40.1% in men and 53.5% in women. With regards to nationality, 92.2% were Portuguese (n=742) and 7.8% were of another nationality (n=63). As for the provenance, 85.1% were from the northern region (n=684), 8.5% were from the central region (n=68), 0.6% were from the southern region (n=5) and 5.8% were from Insular Portugal (the Islands of Açores and Madeira, n=47). The median age of the participants was 20 years old (25^{th} percentile = 19; 75^{th} percentile = 22). With regard to marital status, 51.1% of the participants were single (n=410), 47.1% were in a long-term relationship (n=378) and 1.8% were married (n=15). A mere 0.7% (n=6) of the respondents reported having children, with 3 students stating that they had one child and the other 3 students stating that they had two children.

With regards to sexual experience, 66.1% of the participants (n=532) indicated that they had had some type of sexual relationship. The median age of their first sexual experience was 17 years of age (25^{th} percentile = 16; 75^{th} percentile = 19), with a median of sexual relations of 2 times per week (25^{th} percentile = 0); 75^{th} percentile = 3). The habit of practicing both oral sex and vaginal sex was found to be the most frequent (56.2%), followed by the habit of having oral, anal and vaginal sex (19.2%) and lastly, the exclusive practice of vaginal sex (18.9%). The exclusive practice of oral sex (2.9%), the joint practice of oral and anal sex (2.6%) and the joint practice of vaginal and anal sex (0.2%) were the less common. Most students had had only one sexual partner (69.8%), however 26.0% had had 2 to 5 partners, 3.4% had had 6 to 10 partners and a mere 0.8% had had more than 11 partners.

As far as sexual orientation, heterosexuality was the most frequent (95.7%), followed by homosexuality (2.4%) and lastly, bisexuality (1.9%). However, 5.7% of the participants (n=45) admitted to having had at least one homosexual experience.

Regarding masturbation, 48.7% acknowledged masturbating (n=377), 41.9% of the participants admitted masturbating at a rate of 2 to 3 times a week, 36.2% once a week , 18.1% 4 to 6 times a week and 3.8% 7 or more times a week.

Analysing the relationship between the aforementioned variables and the groups previously defined according to the academic year the students are attending, we verified that only four of the variables showed statistically significant differences (marital status, sexual relations, age of first sexual relation and masturbation) – table 1.

By comparison, group 1 included a higher proportion of single students than groups 2 and 3, in which long-term relationships prevailed. Students in group 3 were sexually more active than those in group 2, and in turn these were more active than the students in group 1. The age of their first sexual experience was more precocious amongst the younger students (group 1), in relation to students in group 2, and of these in relation to those of group 3. Masturbation was most frequent amongst students in group 2, followed by those in group 3.

The relation between the analysed variables in table 1 and sex showed statistically significant differences in nearly all the associations (sexual relations, age of first sexual relation, number of sexual partners, masturbation, sexual orientation, homosexual experience and sexual practices) – table 1. It was found that men tend to have more sexual experience than women and that they initiate their sex life between ages of 15 and 18 at a higher percentage than women in the same group. However, the percentage of women that reported having started their sex life younger than 15 or older than 19 years of age was higher than that of men. As far as the number of partners, we registered a tendency for men to have a greater amount of sexual partners than women. With regards to masturbation, men also assumed masturbating at much greater percentage rates than women. Furthermore, 43.1% of the men admitted to masturbating twice a week, 26.5% four to five times a week, 24.0% once a week and 6.4% masturbate more than seven times a week. On the other hand, 51.6% of the women admitted to masturbating once a week, 40.4% two to three times a week, 7.5% four to five times a week and 0.5% masturbate more than seven times a week. These differences concerning the regularity of masturbation amongst both genders were statistically significant ($P<0.001$). Sexual orientation differed between the genders, since there were more homosexuals amongst the men than amongst the women, in addition to the fact that more men admitted to having had at least one homosexual experience during their lifetime. As for sexual habits, oral

and vaginal sex were the most common within both genders, although men declared having anal sex more frequently than the women.

Tobacco, Alcohol and Drugs

Of the group of participants of this study, 11.2% reported the use of tobacco (n=90), with a median of number of cigarettes per day of 5 (25^{th} percentile = 2; 75^{th} percentile = 10). The median age for the onset of tobacco consumption was 16 years of age (25^{th} percentile = 15; 75^{th} percentile = 18). No statistically significant differences were found for the consumption of tobacco between the different groups (P=0.953). However, men showed a greater tendency to consume tobacco (15.5%) than the women (9.1%; P=0.011). Likewise, sexually active individuals had greater tendency to consume tobacco (14.5%) relatively to those who never had a sexual experience (4.8%; P<0.001). The number of cigarettes/day, as well as the age at which tobacco consumption commenced, did not show any statistically significant difference amongst the academic groups, gender and sexual activity.

With regards to alcohol consumption, 62.4% admitted its consumption (n=502). The type of alcoholic beverage most often consumed were as followed: only spirit drinks (30.0%); spirit drinks, beer and wine (24.7%); spirit drinks and beer (23.3%); spirit drinks and wine (9.1%); beer (6.6%); beer and wine (4.6%); wine (1.3%); and other drinks (0.4%). No significant differences exist for alcohol consumptions amongst the academic groups (P=0.339). Male students had a greater tendency to consume alcohol (72.9%) than the female students (57.4%; P<0.001). The sexually active individuals also had a greater tendency to consume alcohol (68.2%) than those who denied having had sexual experiences (50.9%; P<0.001). There were no statistically significant differences within the different types of alcoholic beverages consumed and the academic groups or sexual activity (P=0.482 and P=0.064, respectively). Nonetheless, women had a greater tendency to consume spirit drinks (39.5%), while men had a greater tendency to consume all types of alcoholic beverages (34.4%; P<0.001).

A percentage of 5.3% of the students (n=43) admitted drug consumption. Marijuana was the most consumed drug (69.4%), followed by the combined consumption of marijuana and hashish (16.7%), though the solo consumption of hashish was less frequent (13.9%). None of the students mentioned the consumption of cocaine, heroin and/or hallucinogenic drugs. The median age for the onset of drug consumption was 18 years (25th percentile = 16; 75^{th} percentile = 18). The male students were more

prone to drug use (9.3%), when compared to the female student (3.5%; P<0.001). No statistically significant differences exist for drug consumption amongst the different academic groups or sexually active individuals (P=0.160 and P=0.140, respectively).

Male Sexual Dysfunctions

Of the male participants who reported having had sexual relations, 7.8% reported erectile dysfunction (n=15). When the relation between erectile dysfunction and academic year was analysed, no statistically significant differences were found (P=0.343). However, a greater percentage of individuals with erectile dysfunction were found amongst those who consumed drugs (22.2%), comparatively to those who denied its consumption (5.9%; P=0.033). These differences were not found with relation to the consumption of alcohol or tobacco (P=0.746 and P=0.302, respectively).

Ejaculatory dysfunction was the most reported problem, affecting 18.2% of the students (n=35). The median number of times that ejaculatory dysfunction occurred was 3 (25^{th} percentile = 1.25; 75^{th} percentile = 5.00). Premature ejaculation was the most common (67.6%), followed by delayed ejaculation (20.8%) and lastly, anorgasmia, anejaculation and delayed ejaculation associated to anorgasmia or anejaculation (all with 2.9%). The median of intravaginal ejaculation latency time (IELT) amongst the students that reported premature ejaculation was of 180 seconds (25^{th} percentile = 120 seconds; 75^{th} percentile = 180 seconds). No statistically significant differences exist between the existence of ejaculatory dysfunction and the academic groups (P=0.412). Merely 3.2% of the students (n=6) reported problems in obtaining an orgasm.

Twenty six percent of the students reported having had sexual relations occasionally without the use of condoms (n=49), with a median of number of times in which this type of situation occurred of 3 (25^{th} percentile = 1; 75^{th} percentile = 5). No differences of significant statistical value were verified between the academic groups relative to this variable (P=0.766). Only two people reported taking type 5 phosphodiesterase inhibitors (1.1%) and 6 people reported having had sexual intercourse with prostitutes (3.1%).

With relation to sexual satisfaction, 51.9% reported maximum sexual satisfaction, 38.8% reported intermediate sexual satisfaction and 9.3% reported low sexual satisfaction. Sexual satisfaction was not statistically different amongst the three academic groups (P=0.231).

With relation to contraceptives, condoms were the most used (43.2%), followed by the combined use of oral contraceptives and condoms (33.5%) and in third place the solo use of oral contraceptives (21.6%). Two people referred to the use of other contraceptive methods that they did not specify (1.1%) and one person did not use contraceptives (0.6%). Condoms were the contraceptive most used by the students in group 1, with its solo use reducing throughout the academic years, contrary to what was seen with the solo use of oral contraceptive or with its combined use with condoms which tended to increase as the students progress into higher academic years – table 2. In general, 81.1% of the students stated that their sexual activity improved after entering university (n=142). It was amongst the older students (groups 2 and 3) that we found higher percentages relative to the improvement of their sexual activity after entering university in relation to the younger students (group1) – table 2.

Female Sexual Dysfunctions

Dyspareunia was the most frequently reported sexual dysfunction by the female participants of this study (40.8%). No statistically significant differences were found between the academic groups with relation to this variable (P=0.388). Women with less weekly sexual relations referred dyspareunia more frequently (0 sexual relations per week – 44.0%, 1 sexual relation per week – 50.0%) than those that had sexual relations two times a week (37.9%) and three or more times a week (33.3%), although it is not statistically significant (P=0.141).

The second most reported problem was the difficulty in obtaining an orgasm (34.7%), with 38.4% of the surveyed women stating that this situation occurred with higher frequency. The third most reported problem was the lubrication difficulty during the sexual act (18.5%). Neither of these two problems presented statistically significant differences between the groups (P=0.969 and P=0.070 respectively).

When asked about the occasional sexual relations without the use of condom, 24.8% answered affirmatively (n=83). The median of number of times this situation occurred was 2 (25^{th} percentile = 1; 75^{th} percentile = 5). There were no significant differences verified between the academic groups, nor amongst the people with different marital statuses (P=0.215 and P=0.308, respectively).

The contraceptive method most used by the women was actually a combination of both condoms and oral contraceptives (44.6%), followed by the solo use of oral contraceptives (34.4%) and by the solo

use of condoms (20.1%). Two of the participants mentioned the use of other contraceptive methods (0.6%) and one person did not use any type of contraceptives (0.3%). As seen with the male students, the solo use of oral contraceptives and the combination of both condoms and oral contraceptives increased as the female students progressed into higher academic years. The solo use of condoms was more frequent in group 1 – table 3.

As far as the first sexual relationship, 76.5% classified their first time as normal, 15.4% as having surpassed their expectations and 8.1% as traumatic. With regards to sexual satisfaction, 53.2% reported maximum sexual satisfaction, 39.0% reported an intermediate level of sexual satisfaction and 7.8% reported low sexual satisfaction. No statistically significant differences were found throughout the academic years as far as sexual satisfaction and classifying of first sexual relationships (P=0,141 and P=0,461, respectively) In general, 76.9% of the female students stated that their sex life improved after entering university (n = 225). The older female students (groups 2 and 3) reported improvement of sexual activity after entering university more frequently, relatively to the younger students (group1) – table 3.

It was found that 29.2% of the women had already used emergency contraceptive pill (n=98), with the median of the number of time used being 2 (25^{th} percentile = 1; 75^{th} percentile = 2). No significant differences were found for the use of the emergency contraceptive pill amongst the diverse groups (P=0.130). There was also no association found between the emergency use of this contraceptive and the use of different methods of contraceptives (P=0.275) or with the occasional practice of sexual relations without the use of condom (P=0.331). Only two students reported having had abortions (0.6%), with each of them having had one abortion.

Marital status

Marital status influenced almost all the variables that were studied – table 4.

It was found that married students were more sexually active than students in long-term relationships, and in turn these were more sexually active than the single students. The same conclusion was drawn relative to the average number of times per week the students were sexually active. On the other hand, the number of sexual partners was lower amongst the married students, followed by those in long-term relationships and of these in relation to the single students. Moreover, the age of first sexual

relation was higher among the married people, comparatively to those in a long-term relationship and the single people.

As far as sexual satisfaction, both married men and women showed higher rates than those in a long-term relationship. The most sexually unsatisfied were the single students. With regards to contraceptives, the use of oral contraceptives was higher amongst those in long-term relationships when compared to the students who were single. The reverse was verified for the use of condoms. No differences were found between the various groups with different marital statuses relative to the occasional sexual relations without the use of condoms, amongst both men and women (P=0,316 and P=0,308, respectively). The same proved to be true with regards to the use of the emergency contraceptive pill (P=0.256).

Discussion

This is the first published study on the sexuality of the Portuguese medical student population. Furthermore, the fact that this study is all inclusive, including not only sexual behaviour but also sexual dysfunctions and risky social behaviour, gives us a broad view of the medical student as a whole, incorporated in his or hers sociocultural context.

Although we noted that students in group 1 have less sexual experience than people of the same age from the American general population, the students in group 2 revealed a similar percentage of sexual activity [2, 15]. Thus as observed in studies from other medical schools, our study indicates towards a later sexual development of these students, particularly with relation to the general population, which may be related to the fact that these students are target to ample pressure due to the necessity of attainment higher grades [5, 7, 9, 14, 16]. On the other hand, the fact that the age of first sexual relationships is much more precocious in younger students, comparatively to the students in group 2, and of these students in comparison with those in group 3, reveals a trend of the younger generations to initiate sexual activity earlier. Although in our study, the percentage of students that have not had any type of sexual activity is similar to that of a study published by Daniyam *et al*, performed on medical students in Nigeria (33.9% vs. 38%), it is far superior to other European and American studies [5, 9, 13]. However, Cao *et al* reported that only 1% (or less) of the Chinese medical students had initiated sexual activity [17].

Students in group 1 were those who least admitted to masturbation, which may be related to the fact that they are the group with less sexual experience (50.3% have no sexual experience whatsoever). A higher percentage of the male gender participants admitted masturbating, which may be related to the fact that in general men initiate their sexual activity earlier. On the other hand, masturbation was much less reported by the women in our study in comparison to that of other studies (32.3% vs. 70,5% and 90%) [5, 9]. It is probable that these differences are due to cultural aspects of the societies in which these individuals are integrated.

Overall, male gender students are more sexually emancipated, having sexual relations at a younger age and having more sexual partners than the women, which suggests that the rate of sexual development differs between the genders. Homosexual orientation is higher amongst men (6.2%) than among women (0.6%), which is in agreement with the literature on the matter (4-5% for men: 2-3% for women) [18-20]. When in comparison to the general Portuguese population, homosexuality is reported in similar percentage by the men (6.2% vs. 6.4%), but in lower percentages by the women (0.6% vs. 5.6%) [21, 22]. Also with regard to sexual practices, men report practicing anal sex more frequently than women, which may be related to the fact that there are more sexually active men and since a younger age, and also to the fact that there are more homosexual men.

Compared to the results obtained by Shindel *et al*, men from our population report lower rates of erectile dysfunction (7.8% vs. 28%), of difficulty attaining orgasm (3.2% vs. 11%) and of ejaculatory dysfunction (18.2% vs. 28%) [5]. Yet when compared to the general Portuguese population, the medical students show lower rates of erectile dysfunction (7.8% vs. 12.9%), but higher rates of ejaculatory dysfunction (18.2% vs. 11.6%) [21]. However, the rates of ejaculatory dysfunction are similar to those denoted in the PEPA study for the age group of 18-24 years old (18%) [23]. Moreover, as far as premature ejaculation, the median IELT is superior to the established limit (120 seconds), for this reason we cannot consider it as a true ejaculatory dysfunction, but instead it should be considered as a premature-like ejaculatory dysfunction. Notwithstanding the lowest rates of erectile dysfunction that were referred by the Portuguese medical students, there is in fact a greater prevalence of this pathology amongst those that consume drugs (marijuana and / or hashish) than amongst those who deny using them. Despite the conflicting results with respect to the role of marijuana potentiating the development of erectile dysfunction, our study supports the possible contribution that the consumption of cannabis may have on the development of an endothelial dysfunction in young adults [24, 25].

With relation to the medical students in our study, and in comparison with the results attained by Shindel *et al*, similar rates were observed for dyspareunia (40.8% vs. 39%) and for difficulty attaining orgasm (34.7% vs. 37%), but fewer problems with lubrication (18.5% vs. 26%) [5]. When compared with the general Portuguese population, the women revealed similar rates of difficulty attaining orgasm (34.7% vs. 31.6%), lower rates of problems with lubrication (18.5% vs. 31.6%) and a higher rate of dyspareunia (40.8% vs. 34.1%) [22]. It should be noted that the comparison of our results was centered on a study conducted upon the female Portuguese population. For this reason the differences that were verified regarding lubrication dysfunctions may be related with the age difference between the populations of the two studies, since as far as general population this dysfunction is reported essentially by postmenopausal women over 50 [22]. On the other hand, the 18 to 24 years age group of the general population reported dyspareunia more frequently [22].

In regards to contraception, our population chooses to use condoms or a combination of condoms and oral contraceptives at a considerably higher percentage than the remaining populations of medical students [5, 9, 11, 12]. As far as the percentage of men that use condoms, it's similar to the percentage published by Rowen *et al* (43.2% vs. 49.7%), while the combined use of both condoms and oral contraceptives is quite higher (33.5% vs. 19.7%) and the solo use of oral contraceptives is less frequent (21.6% vs. 33.7%) [12]. For the women, the combined use of both condoms and oral contraceptives is much higher than that of the population studied in the above mentioned study (44.6% vs. 17.2%), but the solo use of condoms (20.1% vs. 40.2%) and the solo use of oral contraceptives (34.4% vs. 41%) are lower [12]. This population seems to be better protected against sexually transmitted diseases due to the high prevalence of condom use and also against a possible unwanted pregnancy due to the combined use of both condoms and oral contraceptives. However, another interesting finding in these women's sexual behaviour is related to the excessive use of the emergency contraceptive pill, which is surprising, since almost half of the students stated using a double method of contraception. Hence, it is possible that the contraceptive methods are being misused, since no one would expect such a frequent use of an emergency method of contraception, particularly amongst a highly informed population. This result raises questions about the abuse of these types of drugs that do not require medical prescription, in our country. In Spain, a study conducted about contraception amongst young people between the ages of 16 and 29, revealed that only 0.7% of the women resorted to emergency contraception during the last 12 months [26].

Our results indicate a higher level of sexual satisfaction than that of the general American population, correspondingly with other studies [5, 9]. Women presented higher percentages of sexual satisfaction than men, alike the results indicated by Shindel *et al* and Fickweiler *et al* [5, 9]. In truth, being involved in a romantic long-term relationship influences the participant's sexual behaviour: these individual have more weekly sexual activity, higher rates of sexual satisfaction and a lower number of sexual partners. These findings are similar to those described by Shindel *et al* [5].

With regards to risky social behaviours, it appears that both the male and female students smoke less than the general Portuguese population (15.5% vs. 36.1%; 9.1% vs. 20.6% respectively) [21, 22]. However, regarding the consumption of alcohol, the differences between both genders are distinct to those found for the general Portuguese population: the male students consume less alcoholic beverages (72.9% vs. 82%), while amongst the female gender the prevalence of alcohol consumption is greater (57.4% vs. 27.6%) [21, 22].

There were some limitations to this study. Although the answers to the questionnaires were anonymous and confidential, they may have been given in accordance to what is considered to be socially acceptable, besides the fact that the students that did not fill out the questionnaire may have different sexual habits than those that were included in this study. The fact that the study was carried out merely at one medical educational institution may constitute a limitation to the generalization of its conclusions to every Portuguese medical student.

Conclusions

This study clarifies some aspects about the sexuality of medical students and constitutes a solid foundation for further research in this area. A study about the Portuguese population's sexual behaviour but with a larger sample is essential to establish the different sexual patterns between individuals of the same age and gender, when compared to a very specific population such as medical students.

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Table 1 – Differences between groups and genders with regard to marital status and sexual patterns (in percentage).

	Group 1	Group 2	Group 3	P value	Female	Male	P value
Marital status							
Single	62.7	46.2	42.8		50.8	51.6	
Long-term relationship	35.9	50.8	56.0	<0.001	47.5	46.1	0.515
Married	1.4	3.0	1.2		1.7	2.3	
Sexual relations	49.7	71.5	79.2	<0.001	62.5	73.6	0.002
Age of first sexual relation							
<15	14.9	9.1	5.6		10.5	7.3	
15-18	78.0	64.2	51.8	<0.001	59.0	70.7	0.028
≥ 19	7.1	26.7	42.6		30.5	22.0	
Sexual relations per week							
0	33.1	22.0	22.6		22.5	29.9	
1	20.9	26.3	23.1	0.055	25.6	20.3	0.123
2	27.3	24.3	22.1		26.1	20.9	
≥ 3	18.7	27.4	32.2		25.8	28.9	
Number of sexual partners							
1	78.3	67.9	66.0		73.4	63.6	
2-5	18.1	27.8	29.9	0.130	25.4	27.1	<0.001
6-10	3.6	2.7	3.6		1.2	7.1	
11-20	0.0	1.6	0.5		0.0	2.2	
Masturbation	40.5	55.9	50.6	0.001	32.3	82.9	<0.001
Sexual orientation							
Heterosexual	95.7	94.3	97.2		97.5	91.9	
Homosexual	1.8	4.2	1.2	0.179	0.6	6.2	<0.001
Bisexual	2.5	1.5	1.6		1.9	1.9	
Homosexual experience	4.6	8.0	4.5	0.152	3.9	9.4	0.003

Sexual practices							
Vaginal	17.0	20.4	18.7		21.4	14.3	
Oral	4.3	3.1	1.5		2.6	3.2	
Vaginal + oral	53.2	55.6	59.1	0.613	56.9	55.0	<0.001
Vaginal + anal	0.7	0.0	0.0		0.0	0.5	
Oral + anal	3.5	3.1	1.5		0.0	7.4	
Vaginal + oral + anal	21.3	17.8	19.2		19.1	19.6	

Table 2 – Differences between the academic groups regarding contraception and sexual activity after entering university amongst the male gender (in percentage).

	Group 1	Group 2	Group 3	P value
Contraception				
Condom	61.3	43.7	29.9	
Oral contraceptive	11.4	16.9	34.3	
Oral contraceptive + condom	25.0	36.6	35.8	0.006
Other	0.0	2.8	0.0	
None	2.3	0.0	0.0	
Sexual life after entering university				
Improved	43.6	87.9	95.3	<0.001
Worsened	56.4	12.1	4.7	

Table 3 – Differences between the academic groups regarding contraception and sexual activity after entering university amongst the female gender (in percentage).

	Group 1	Group 2	Group 3	P value
Contraception				
Condom	30.8	17.9	14.1	
Oral contraceptive	27.7	31.2	42.1	
Oral contraceptive + condom	40.4	50.0	43.0	0.038
Other	1.1	0.0	0.8	
None	0.0	0.9	0.0	
Sexual life after entering university				
Improved	55.1	83.7	85.6	<0.001
Worsened	44.9	16.3	14.4	

Table 4 – Sexual behaviour: differences between individuals with different marital statuses (single, long-term relationship, married/ in percentage).

	Single	Long-term relationship	Married	P value
Sexual relations	44.6	88.1	100.0	<0.001
Age of the first sexual relation				
<15	11.0	8.9	0.0	
15-18	62.6	64.8	33.3	<0.001
≥ 19	26.4	26.3	66.7	
Sexual relations per week				
0	63.5	5.5	0.0	
1	14.9	29.2	7.1	
2	12.2	29.4	57.2	<0.001
≥ 3	9.4	35.9	35.7	
Number of sexual partners				
1	57.6	75.7	93.3	
2-5	36.3	21.3	0.0	<0.001
6-10	5.0	2.7	0.0	
11-20	1.1	0.3	6.7	
Male gender				
Sexual satisfaction				
Low	18.8	1.9	0.0	
Intermediate	51.2	33.0	0.0	<0.001
Maximum	30.0	65.1	100.0	
Contraception				
Condom	66.2	26.3	16.6	
Oral contraceptive	5.0	32.3	66.7	
Oral contraceptive + condom	28.8	39.4	0.0	<0.001
Other	0.0	1.0	16.7	
None	0.0	1.0	0.0	

Female gender				
Sexual satisfaction				
Low	20.0	2.3	11.1	
Intermediate	57.0	31.2	22.2	<0.001
Maximum	23.0	66.5	66.7	
Contraception				
Condom	23.5	18.8	12.5	
Oral contraceptive	15.7	42.6	50.0	
Oral contraceptive + condom	60.8	38.2	12.5	<0.001
Other	0.0	0.4	25.0	
None	0.0	0.0	0.0	

Appendix

- This questionnaire aims to study the evolution of sexual patterns in medical students. This study is being undertaken in collaboration with the department of Urology, in Hospital de São João.

- The questionnaire is anonymous and has three pages.

- The questions regarding sexual practices, the type of beverage and the types of ejaculatory dysfunction may have more than one answer.

- To ensure confidentiality, students must seal the envelopes after answering the quiz.

1. Gender: ☐ Male ☐ Female

2. Academic Year: ____

3. Nationality: ☐ Portuguese ☐ Other_____

4. Provenance: ☐ Center ☐ South ☐ North ☐ Insular Portugal

5. Age: _____

6. Marital status: ☐ Single ☐ Long-term relationship ☐ Married ☐ Other_____

7. Children: ☐ No ☐ Yes **8. How many?_____** **9. Age of children:**_____

10. Have you ever had sexual relations? ☐ No ☐ Yes

11. Age of your first sexual relation: _____

12. Number of sexual relations per week (mean): _____

13. Number of sexual partners you have had: ☐ 1 ☐ 2-5 ☐ 6-10 ☐ 11-20 ☐ >21

14. Masturbation: ☐ No ☐ Yes **15. Number of times per week:** ☐ 1 ☐ 2-3 ☐ 4-6 ☐ >7

16. Sexual Orientation: ☐ Heterosexual ☐ Homosexual ☐ Bisexual

17. Homosexual Experience: ☐ No ☐ Yes **18. How many times?** _____

19. Sexual practices: ☐ Vaginal ☐ Oral ☐ Anal

20. Tobacco: ☐ No ☐ Yes **21. Age of onset:**_____ **22. Number of cigarettes/day:**____

23. Alcoholic beverages: ☐ No ☐ Yes **24. Type of beverage**: ☐ Spirit drinks ☐ Beer ☐ Wine ☐ Other_____

25. Drugs: ☐ No ☐ Yes **26. Which drugs?** _____ **27. Age of onset**_____

MALE

Have you ever had…?

1. Erectile dysfunction: ☐ No ☐ Yes **2. How many times?** _____

3. Ejaculatory dysfunction: ☐ No ☐ Yes **4. How many times?** _____

5. Type: ☐ Delayed ☐ Anejaculation ☐ Anorgasmia ☐ Premature

6. If Premature – intravaginal time - _____ seconds

7. Problems in obtaining orgasm: ☐ No ☐ Yes **8. Is it very common?** _____

9. Problems controlling ejaculation: ☐ No ☐ Yes

10. Occasional sexual relation without the use of condom: ☐ No ☐ Yes **11. How many times?** _____

12. To use Viagra/Levitra/Cialis: ☐ No ☐ Yes **13. How many times?**_____

14. Which one? _____ **15. Why?**_____

16. Sexual experience with prostitutes: ☐ No ☐ Yes **17. How many times?**_____

18. Classify your sexual satisfaction: 1_____10

19. Contraceptives: ☐ Condom ☐ Oral contraceptive ☐ Condom + Oral contraceptive ☐ Other _____

20. After entering university did your sexual life…? ☐ Improve ☐ Worsen

FEMALE

Have you ever had…?

1. Problems in obtaining orgasm: ☐ No ☐ Yes **2. Is it very common?** _____

3. Lack of lubrification: ☐ No ☐ Yes

4. Pain during intercourse: ☐ No ☐ Yes

5. Occasional sexual relation without the use of condom: ☐ No ☐ Yes **6. How many times?** _____

7. To use the emergency contraceptive pill? ☐ No ☐ Yes **8. How many times?** _____

9. A voluntary Abortion: ☐ No ☐ Yes **10. How many times?** _____

11. Classify your first sexual relation: ☐ Surpassed the expectations ☐ Traumatic ☐ Normal

12. Classify your Sexual satisfaction: 1_____10

13. Contraceptives: ☐ Condom ☐ Oral contraceptive ☐ Condom + oral contraceptive ☐ Other _____

14. After entering university did your sexual life…? ☐ Improve ☐ Worsen

- Este questionário visa estudar a evolução dos padrões sexuais dos estudantes de medicina. Este trabalho está a ser realizado em colaboração com o serviço de Urologia do Hospital de São João.
- O questionário é anónimo e possui 3 páginas.
- As questões relativas aos tipos de práticas sexuais, aos tipos de consumo de álcool e aos tipos de disfunção ejaculatória podem ter mais do que uma resposta.
- De forma a garantir a confidencialidade, os alunos devem selar os envelopes após responderem ao questionário.

1. Sexo: ☐ Masculino ☐ Feminino

2. Ano da faculdade: _____

3. Nacionalidade: ☐ Portuguesa ☐ Outra_____

4. Idade: _____ anos

5. Região de procedência: ☐ Centro ☐ Sul ☐ Norte ☐ Portugal Insular

6. Relação: ☐ Solteiro ☐ Namorando ☐ Casado ☐ Outro _____

7. Filhos: ☐ Não ☐ Sim **8. Quantos?_____** **9. Idade(s)?_____**

10. Já teve relações sexuais? ☐ Não ☐ Sim

11. Idade da primeira relação sexual: _____

12. Relações sexuais semanais em média: _____

13. Quantos parceiros sexuais já teve? ☐ 1 ☐ 2-5 ☐ 6-10 ☐ 11-20 ☐ >21

14. Masturbação: ☐ Não ☐ Sim **15. Nº vezes por semana:** ☐ 1 ☐ 2-3 ☐ 4-6 ☐ >7

16. Orientação Sexual: ☐ Heterossexual ☐ Homossexual ☐ Bissexual

17. Experiência Homossexual: ☐ Não ☐ Sim **18. Quantas vezes?** _____

19. Práticas sexuais que já teve: ☐ Vaginal ☐ Oral ☐ Anal

20. Tabaco: ☐ Não ☐ Sim **21. Idade de início:**_____ **22. Nº cigarros/dia: _____**

23. Bebidas alcoólicas: ☐ Não ☐ Sim **24. Tipo de bebida:** ☐ Branca ☐ Cerveja ☐ Vinho ☐ Outras_____

25. Drogas: ☐ Não ☐ Sim **26. Quais?** _____ **27. Idade de início**: _____

MASCULINO

Alguma vez teve…?

1. Disfunção erétil: ☐ Não ☐ Sim **2. Quantas vezes?** _____

3. Disfunção ejaculatória: ☐ Não ☐ Sim **4. Quantas vezes?** _____

5. Tipo: ☐ Retardada ☐ Anejaculação ☐ Anorgasmia ☐ Prematura

6. Se Prematura – tempo aproximado intravaginal - _____ segundos

7. Problemas em obter orgasmo: ☐ Não ☐ Sim **8. Frequentemente?** _____

9. Dificuldade no controlo da ejaculação: ☐ Não ☐ Sim

10. Relação sexual ocasional sem preservativo: ☐ Não ☐ Sim **11. Nº de vezes**_____

12.Que usar Viagra/Levitra/Cialis: ☐ Não ☐ Sim **13. Quantas vezes?** _____

14. Qual? _____ **15. Porquê?_____**

16. Experiência com prostitutas: ☐ Não ☐ Sim **17. Quantas vezes?_____**

18. Classifique a satisfação com a sua vida sexual: 1_____10

19. Método anticoncetivo: ☐ Preservativo ☐ Pílula ☐ Preservativo+Pílula ☐ Outro_____

20. Após entrada na faculdade sua vida sexual: ☐ Melhorou ☐ Piorou

FEMININO

Alguma vez teve…?

1. Problemas em obter orgasmo: ☐ Não ☐ Sim **2. Frequentemente?**_____

3. Dificuldade na lubrificação: ☐ Não ☐ Sim

4. Dor durante a relação sexual: ☐ Não ☐ Sim

5. Relação sexual ocasional sem preservativo: ☐ Não ☐ Sim **6. Nº vezes**____

7. Que usar "pílula do dia seguinte": ☐ Não ☐ Sim **8. Nº vezes**____

9. Um aborto provocado: ☐ Não ☐ Sim **10. Nº vezes**____

11. Primeira relação sexual: ☐ Superou as expectativas ☐ Traumática ☐ Normal

12. Classifique a satisfação com a sua vida sexual: 1_____10

13. Método anticoncetivo: ☐ Preservativo ☐ Pílula ☐ Preservativo+Pílula ☐ Outro _____

14. Após entrada na faculdade sua vida sexual: ☐ Melhorou ☐ Piorou

Anexos

Carla Peixoto <carlapcp@gmail.com>

Tese Mestrado Integrado Medicina 2012

Carla Peixoto <carlapcp@gmail.com> 12 de março de 2012 21:25
Para: srbollini@gmail.com

Boa noite Dr. Silvio Bollini,

Eu sou aluna do 6º ano da Faculdade de Medicina da Universidade do Porto e estou a fazer a minha tese de mestrado integrado sobre padrões sexuais dos estudantes de medicina.
O meu orientador, o Dr. Nuno Tomada já lhe tinha solicitado uma autorização para eu poder aplicar o seu questionário sobre sexualidade na minha faculdade. No entanto, não conseguimos encontrar o seu e-mail de resposta com a confirmação. Desta forma, pedia-lhe, por favor, para responder a este e-mail, confirmando que autorizou a utilização do questionário, uma vez que tenho que anexar essa autorização à minha tese.

Muito obrigada pela atenção,

Carla Peixoto

Carla Peixoto <carlapcp@gmail.com>

Tese Mestrado Integrado Medicina 2012

silvio bollini <srbollini@gmail.com> 13 de março de 2012 16:32
Para: Carla Peixoto <carlapcp@gmail.com>

Olá

Podes utilizar o questionário sem problemas

Silvio Bollini

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Original research papers are scientific reports from original research in sexual medicine. As a general guideline, manuscripts should be 3,000 words in length though more extensive manuscripts will certainly be considered and judged on merit. All manuscripts must include an abstract, a maximum of 7 tables and figures (total), and up to 50 references. More may be accepted if justified.

Reports Case

Reports usually describe one to three patients with pertinent conditions. Brief Reports are concise reports of cases, clinical experience, clinical studies, drug trials, adverse effects, or devices related to sexual medicine. Maximum length of text is 1,750 words; no more than 10 bibliographic references and one figure or table per case.

Review Articles

Review articles in sexual medicine are usually solicited by the editors. The text should be approximately 5,000 words, with an abstract, a maximum of 7 tables and figures (total), and up to 75 references. More may be accepted if justified. Review articles undergo the same peer-review and editorial process as all other manuscripts submitted to the journal.

Editorial Comment

Editorials providing commentary and analysis of an article in the particular issue of the journal are always solicited. Authors of the original paper will be given opportunity to respond to the editorial comment in the same issue. Editorial comments are limited to 1,000 words, with up to 7 references.

Letters to the Editor

Letters to the Editor, subject to editing, are considered for publication provided they do not contain material submitted or published elsewhere. The text must not exceed 500 words or have more than five references and one figure or table. Letters referring to a published article must be received within four months of the article's publication.

Calendar

This is a section in the back of the journal for news and meeting announcements from ISSM and its Regional Affiliate Societies, as well as other appropriate meeting announcements. Please send contributions to this section directly to jsm@issm.info.

Abstracts

Abstracts must be submitted in the appropriate field without the manuscript title or factors identifying the authors or institutions. Abstracts have a 300- word limit. They must include introduction, aim, methods, main outcome measures, results and conclusions. Please type N/A in the abstract field for letters.

References

References are to be cited consecutively in the text typed after the final punctuation. References at the end of each manuscript should be listed in the order in which they are first cited in the text, typed double-spaced. The references should conform to the Index Medicus style, omitting number and day of month of issue. Punctuation is shown in the examples below. References to articles in press must state name of journal and if possible, volume and year.

For journal articles: all authors should be listed, title of article; name of journal; year; volume number; first and last page.

For books: surname and initials of all authors, title and subtitle, edition (other than first), publishing house, city, year, page as specific reference.

For chapters in books: surname and initials of all authors of chapter, title of chapter, editors, authors, or compilers of book, title of book, edition (other than first), publishing house, city, year, page

1. Jones, TH, Smith, ML, Land SW. Diagnosis and treatment of erectile dysfunction. J Urol 1986;135:922-927.
2. King, RE. Sexual dysfunction in men and women. Taylor and Francis: Philadelphia 1974, 86pp.
3. Stevens RA, Otis PN. Persistent sexual arousal syndrome. In: Johnson DA, ed. Female sexual dysfunction.. Little Brown and Company: Boston, 1976, pp 100-106.

Abbreviations, symbols and nomenclature

A list of acceptable abbreviations is published in the Uniform Requirements for Manuscripts submitted to Biomedical Journals (also known as the Declaration of Vancouver). For more information, refer to: International Committee of Medical Journal Editors. Uniform requirements for manuscripts submitted to biomedical journals. Ann Intern Med 1997;126:36-47.

You may contact the Editor or publisher directly with questions.

Only generic names of drugs may be used. Quantitative data must be reported in SI units.

Please note that Word 2007 is not yet compatible with journal production systems. Unfortunately, the journal cannot accept Microsoft Word 2007 documents until such time as a stable production version is released. Please use Word's 'Save As' option therefore to save your document as an older (.doc) file type.

Artwork Guidelines

There are three preferred formats for digital artwork submission: Encapsulated PostScript (EPS), Portable Document Format (PDF), and Tagged Image Format (TIFF). We suggest that line art be saved as EPS files. Alternately, these may be saved as PDF files at 600 dots per inch (dpi) or better at final size. Tone art, or photographic images, should be saved as TIFF files with a resolution of 300 dpi at final size. For combination figures, or artwork that contains both photographs and labeling, we recommend saving figures as EPS files, or as PDF files with a resolution of 600 dpi or better at final size. More detailed information on the submission of electronic artwork can be found at http://authorservices.wiley.com/prep_illust.asp.

Tables and Figures - House Style

Tables should be typed double-spaced on separate pages with number and title. Symbols for units should be confined to column headings. All tables and figures must be original for original research. If a table or figure has been published before, written permission must be given by the owner for its reproduction.

Color illustrations

Authors may publish one color image per article free of charge. Any other color figures published within the same article will be charged to the author at $800 per image.

Proofs

Proofs will be sent as portable document format (PDF) attachments by email. Full instructions will accompany them.