

Sexual Education for Senior Age: Continuous Increase Inreported Cases of HIV in Brazil - 2005/2015



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Introduction

The economic development in emerging countries promoted an increase of access for new medical technologies and services which improve the life expectancy of your population at last 10 years [1]. In Brazil, the increase of senior group is accompanied by new demands for a better quality of life, based on the interaction and social integration of the elderly [2]. However, this social renaissance may be followed by agents that did not represent a risk for this group [3]. Either by lack of preventive knowledge or by the cultural conduct to not use condoms, in the past, of this generation. Our study assessed the number of HIV-infected from Brazilian Ministry of Health public database (DATASUS) during the last 10 years. We focused on analyzing the frequency in senior age group, which was divided in the following distribution by age: 60-64, 65-69, 70-74, 75-79 and 80<years old. We compared the price's evolution from the two main drugs for erectile dysfunction (Drug 1 and Drug 2) at Agência Nacional de Vigilância Sanitária - ANVISA database in the last 10 years. Today, there are ~36.7 million people infected by HIV in the world, whereas in Brazil there was an increase in estimated number of people (all ages) living with HIV (n~700.000 in 2010/ n~830.000 in 2015) in Brazil, with an estimative of ~15.000 deaths/year [4].

In Brazil, the group from 60 to 64 years old (Table 1A) initially presented a considerable number of HIV reported cases (n=5069 - 2005) by different transmission routes of infection including sex and still concern after 10 years in this specific age group (n= 7797 - 2015) with an increase of 53.82%. The last age group (80 < years) presents a considerable estimated prevalence of HIV (n=2.112 in 2005/n=3.308 in 2015) presenting an increase of 56.63%. This result might be explained by multiple reasons as follows: The drugs for erectile dysfunction presented more options of dosage with the reduction of the active ingredient (Drug 1 - 25 mg, 50 mg

and 100 mg / Drug 2 - 20 mg) and consequent price reduction, (Drug 1 - R\$24.210 - 25mg - 1pill / Drug 2- R\$52.49- 20 mg -1pill) which provide more presence and availability to a larger group of consumers in Brazil according to ANVISA's database in 2016 (Table 1B). The increase in Brazilian life expectancy present a continuous growth that was 9.8% in 2005 and in 2015, the last available data, was 14.3% shows us new problems related to the resocialization in old age, which includes the right to leisure, group activities and even sexual activity.

Considering the diversity of drugs for erectile dysfunction available in the market and their relative decrease in price over the last 10 years in Brazil, allied to the growing participation of old group in dating apps (56 to 64 year olds - doubled the use of online dating services from 2013 to 2015) (Table 1C) [5]. The estimative of individuals living with HIV in all old age group in Brazil (60 to 80 years old - n=23.940 in 2015), and the constant increase of reports at last 10 years (>86.17%), may be consider as a consequence from a unexpected problem (Figure 1). Probably, the monogamous behavior induced by social and religious precepts protected this population at past, but in the search for a new companion, they may develop unprotect sex because contraception was the big problem at their young age, and disregard the dangers of sexually transmitted diseases, since they were a problem related only to people with "questionable character", as drug addicts [6]. Emerging countries have similar growth of their elderly population and may present the same problems with considerable development of sexually transmitted diseases in the senior age. We may consider urgent a sexual education program for this special age group, and maybe a more specific palliative method in the sale of these drugs to this group, due to this continuous increase in HIV prevalence in old age.

Table 1A: Estimated Prevalence of HIV in Elder People-Brazil.

Year	60 - 64	65 - 69	70 - 74	75 - 79	80 >	Total
2005	5.069	4.063	2.989	2.133	2.112	16.367

2006	5.271	4.162	3.082	2.190	2.211	16.918
2007	5.513	4.250	3.194	2.239	2.322	17.520
2008	5.783	4.343	3.314	2.287	2.440	18.170
2009	6.065	4.462	3.430	2.345	2.560	18.864
2010	6.348	4.621	3.535	2.418	2.677	19.601
2011	6.633	4.817	3.631	2.504	2.795	20.382
2012	6.919	5.048	3.719	2.605	2.915	21.208
2013	7.207	5.306	3.810	2.713	3.039	22.077
2014	7.499	5.575	3.925	2.818	3.169	22.988
2015	7.797	5.844	4.076	2.913	3.308	23.938
Increase (%)	>53.82%	>43.83%	>36.37%	>36.57%	>56.63%	>46.26%

Table 1B: Price Evolution (BRL Currency*) - Erectile Dysfunction Drugs.

Year	Drug 1 25mg 4Pills	Drug1 50 mg 1Pill	Drug1 50 mg 4Pills	Drug1 100mg 4Pills	Drug2 20mg 1Pill	Drug2 20mg 2Pills	Drug2 20mg 4Pills	Drug 20mg 8 Pills
2005	106.01	-	116.54	182.47	-	69.92	139.83	279.68
2006	107.08	-	117.72	184.29	-	70.62	141.23	282.47
2007	107.08	-	117.72	184.29	-	70.62	141.23	282.47
2008	116.25	-	127.8	200.08	-	76.67	153.34	306.67
2009	116.25	-	127.8	200.08	-	76.67	153.34	306.67
2010	121.43	-	133.48	208.98	-	80.08	160.15	320.32
2011	62.86	17.28	138.21	108.19	-	82.93	165.82	331.66
2012**	66.54	18.29	146.29	114.52	-	87.77	175.52	351.07
2013	70.75	19.44	155.53	121.75	46.66	93.32	186.59	373.22
2014	74.77	20.55	164.36	128.66	49.31	98.61	197.19	394.43
2015	78.51	21.58	129.76	101.58	46.65	93.3	186.57	373.19

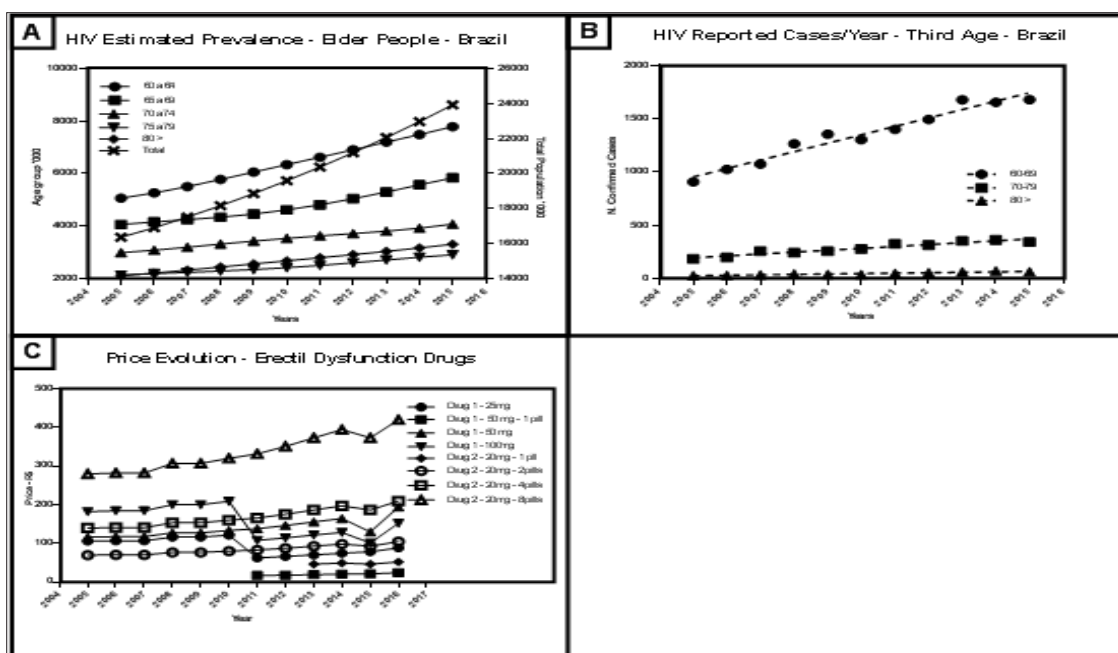


Figure 1: If the overall slopes were identical, there is less than a 0.01% chance of randomly choosing data points with slopes this different. We can conclude that the differences between the slopes are extremely significant. Because the slopes differ so much, it is not possible to test whether the intercepts differ significantly.

Table 1C: HIV Positive Cases Reported/Age - Brazil - 2005/2016.

Year	Age Group												NC***	Total
	< 1	1-4	5-9	10-14	15-19	20-29	30-39	40-49	50-59	60-69	70-79	80 >		
2005	328	487	380	201	547	8.298	13.581	9.303	3.598	909	184	28	4	37.848
2006	303	387	299	190	593	8.056	13.155	9.362	3.535	1.026	198	29	0	37.133
2007	288	329	277	221	584	8.239	13.288	9.633	3.937	1.075	258	34	0	38.163
2008	279	344	241	236	688	8.856	13.571	10.267	4.472	1.268	242	43	1	40.508
2009	265	322	208	202	674	8.895	13.590	10.099	4.463	1.358	255	37	0	40.368
2010	268	302	196	172	670	8.920	13.018	10.031	4.677	1.305	277	36	0	39.872
2011	281	212	165	178	763	9.379	13.869	10.433	4.789	1.402	326	48	0	41.845
2012	222	274	122	157	850	9.542	13.417	10.071	4.899	1.495	314	54	12	41.429
2013	199	250	119	133	952	9.981	13.402	9.995	5.130	1.681	353	60	11	42.266
2014	212	212	120	117	1.000	9.807	12.867	9.468	5.109	1.657	363	71	4	41.007
2015	199	182	96	88	951	9.546	12.165	8.771	5.028	1.683	342	62	0	39.113

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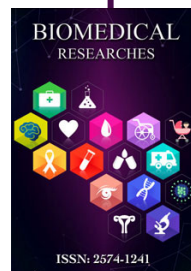
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