

1 Contraception Among Tertiary Students: Knowledge, use and 2 Behaviour of Female Undergraduates in Edo State, Nigeria

3 Dr. Aigbiremolen A.O.¹

4 ¹ Irrua Specialist Teaching Hospital, Irrua, Edo State, Nigeria.

5 *Received: 9 December 2013 Accepted: 2 January 2014 Published: 15 January 2014*

6

7 **Abstract**

8 Background: increased sexual activities among young people, unwanted pregnancies, unsafe
9 abortions and secondary infertility have become major reproductive health concerns in nigeria.
10 Unwanted pregnancy while preventable through appropriate contraception is a risk factor for
11 disruption of education, future unemployment, and secondary infertility.Aim: To assess
12 contraceptive knowledge, use and related behavior among female undergraduates in tertiary
13 institutions in edo state, nigeria.Methods: The study was a descriptive cross-sectional survey
14 using semi-structured self-administered questionnaire. Female undergraduates from two
15 tertiary institutions (federal polytechnic, auchi and ambrose alli university, ekpoma) in edo
16 north and central districts were selected using a multistage sampling technique and a sample
17 of 374 students was drawn from both institutions.Results: The age group of 20-24 years
18 constituted the highest proportion (61.5

19

20 **Index terms**— contraception, sexual behavior, unwanted pregnancy, undergraduates.

21 **1 Background**

22 he environment in higher institutions of learning is characterized by high levels of personal freedom and social
23 interaction. This social interaction often translates to sexual interaction (Alexander et al, 2007). Permissive
24 sexual lifestyle in higher educational institution in Nigeria and a number of other African countries have been
25 documented as featuring a high level of risky sexual behaviors such as transactional sex, multiple sexual partners,
26 and unprotected casual sex. (Manena-Netshikweta, 2007; Katjaviri and Otaala 2003).

27 Such reproductive health behavior is prone to consequences of unwanted pregnancies, unsafe abortions,
28 disruption of education and secondary infertility (Malhotra, 2008;Akingba, 2002;Adegoke, 2003). Given the
29 increasing level of sexual activities among young people and decreasing age at first sex in developing countries,
30 the use of contraceptives to prevent unwanted pregnancy and unsafe abortion is especially important (Adedoyin
31 et al, 1995; Okonkwo et al, 2005;Uthman, 2008).

32 It has been reported by the Nigerian Population Commission (NPC) that knowledge of contraception is lowest
33 among women with no education and greatest among women with more than secondary education ??NPC and
34 ICF Macro, 2009). This indicates that along the line, there is improvement in contraceptive knowledge though
35 it may not always translate to the same level of utilization. This utilization gap has been highlighted in some
36 studies among adolescents and out of school women (Idonigie et al, 2011; Abiodun et al, 2001). A high level of
37 knowledge and concomitant utilization of contraception is desirable among adult women, a significant proportion
38 of which is in tertiary institutions.

39 The current contraceptive prevalence rate in Nigeria is about 15% ??NPC and ICF Macro, 2009). This low
40 rate underlies the population explosion and other reproductive health challenges being currently experienced in
41 the country. Women in tertiary educational institutions are included in the over 200 million women worldwide
42 who have an unmet contraceptive need ??McPhail et al, 2007). This study was to investigate the knowledge,
43 use, and behaviour regarding contraceptives among female undergraduates in tertiary institutions in Edo State.

5 DISCUSSIONS

44 2 II.

45 Methods 2012/2013. The two institutions are located in urban communities in the central and northern districts
46 of Edo State.

47 The sample size was determined using the Cochran formula (Cochran, 1963; Israel, 2012), $N = Z^2 pq/E^2$
48 Where, N = Sample size; E =Tolerable Error of margin (0.05); p = prevalence (25.4%) of contraceptive use in
49 a study done in tertiary institutions in Illorin, Nigeria (Abiodun and Balogun, 2009); Z = Standard Normal
50 Deviation (1.96); $Q=1-p$ ($1-0.58=0.42$). The minimum sample size was thus calculated to be 288. However
51 400 questionnaires were administered to the study group to enhance the validity, while 356 questionnaires were
52 analysed after setting aside poorly filled ones.

53 The sample was designed to accommodate all categories of female students in the tertiary institutions. The
54 multistage sampling technique was used. Two institutions and two faculties each from the institutions was
55 selected by simple random technique. Selfadministered questionnaires were subsequently distributed to available
56 students in the selected faculties. The questionnaires were semi-structured and dealt with such areas as the
57 knowledge of the benefits and methods of contraception, and the utilization of contraceptives. Knowledge of
58 contraception was assessed with a scoring system based on responses to mainly questions on the methods and
59 benefits of contraceptives (Box 1).

60 Statistical package for scientific solutions (SPSS) version 16 was used for data collation, editing, and analysis.
61 Other secondary analyses were done with the WINPEPI software ??Abramson, 2011). Results are presented in
62 tables. Test of significance using chisquare was applied to selected variables. Ethical guidiance was provided by
63 the Department of Community Health, Ambrose Alli University, Ekpoma. Permission was obtained from the
64 authorities of the two selected institutions while verbal consent was obtained from each study participant.

65 3 Results

66 Respondents in the age group 20 to 24 years constituted the largest group (61.5%) and the mean, median,
67 and modal ages were $23 +/4.2$ years, 22 years and 20 years respectively. The study group consisted mostly
68 of singles (80.6%) and Christians (85.6%). About the same proportion of respondents participated from the
69 two institutions (Table 1). A high level of awareness about contraceptives was found (94.4%) but the level was
70 lower (69.7%) for emergency contraceptives (Table 2). The highest sources of information about contraceptives
71 were mass media (34.0%); health personnel (30.0%) and friends (28.7%). Over 76% and about 56% of the
72 study respondents identified use of condoms and oral contraceptive pills (OCPs) as methods of contraception.
73 Spermicidal agents and tubal ligation (10.7% each) were the least popular as contraceptives. The school was
74 one of the lowest contributors (6.7%) to information on contraception. Only 31.2% of the undergraduates had
75 good knowledge of the methods and benefits of using contraceptives. Almost 57% of respondents had used some
76 form of contraceptives compared to only 10.7% who had used emergency contraceptives. The most commonly
77 used contraceptives were condoms (57.4%) and OCPs (28.7%). The least methods used were subcutaneous
78 implants and rhythm method (2.5% each) while only 40.1% regularly used contraceptives. Thirtynine percent of
79 respondents had used some form of contraceptives in the six months prior to data collection while 45.2% had sex.
80 Among those who have used emergency contraceptives, 28.9% used laevonorgestrel. The greater proportion of
81 respondents who had good knowledge of contraception were senior students ($\chi^2 = 3.409$; $p = 0.182$) and those
82 who were sexually active ($\chi^2 = 5.882$; $p = 0.054$) though there was no statistically significant association. There
83 was a statistically significant association between knowledge and current use (within the preceding 6 months) of
84 contraceptives ($\chi^2 = 7.756$; $p = 0.021$).

85 4 IV.

86 5 Discussions

87 A high proportion of the respondents were unmarried youths. This is consistent with the global picture of
88 mostly young persons being in higher institutions of learning (Statistics Canada, 2010; Cadmus and Owoaje,
89 2009). The greater proportion of young persons found in higher institutions provides both an opportunity and
90 a challenge. It provides an opportunity to learn, grow and develop. This group is faced with the challenge of
91 risky sexual behavior and consequent unwanted and unplanned pregnancies and sexually transmitted infections
92 including HIV/AIDS (WHO, 1999). Notably, Bronfenbrenner's socioecological model (Oswalt, 2008) identifies
93 the school as a component of the microsystem-having direct influence on the behavior (sexual and otherwise)
94 of the individual.

95 A high level of awareness (94.4%) of contraceptives is not surprising to find among females in tertiary
96 institutions. Reports from other findings (Abiodun and Olayinka, 2009; Tilahun et al, 2010) corroborates
97 this. However, awareness of emergency contraception (EC) was lower (69.7%) than that for general methods
98 of contraception but much higher than that reported elsewhere (Puri et al, 2007; Frank et al, 2002). This
99 lower awareness may be due to the more technical understanding required to grasp the principles of emergency
100 contraception. In addition, there are no too many methods of EC known and used today. The common methods
101 of EC are laevonorgestrel, high dose COCP and intra-uterine contraceptive device (IUCD) (Weismiller, 2004;
102 ??HO, 2012).

103 The sources of information were diverse ranging from mostly informal sources to a few formal sources.
104 Volume XIV Issue II Version I Year ()

105 **6 K**

106 Informal sources such as friends, peers and relatives are common information sources for young people (Tilahun
107 et al, 2010;) but yet prone to misconceptions, distortions and half-truths. In this study, mass media, health
108 personnel and friends contributed the most as sources of information on contraception.

109 Internet and mobile phone messages which are relatively new ways of spreading health information also
110 contributed to the knowledge about contraceptives among respondents. These two modern channels have special
111 appeal for young people and should thus, be thoroughly harnessed in disseminating correct information about
112 reproductive health issues (Diaz et al, 2002; McNab, 2009). They have also taken the nature of mass media where
113 no special authorization is required to spread sensitive and behavior-modifying information. Therefore, health
114 professionals and institutions must contribute timely and adequate information through modern electronic media.
115 In the absence of this, falsehood and half truths may become the order of the day because there is no vacuum in
116 nature.

117 Condoms and oral contraceptive pills (OCPs) were popular among respondents, a finding consistent with
118 other studies (Adegbenga et al, 2003; Chakrapani et al, 2011; Abiodun and Olayinka, 2009). Among the least
119 known methods were those requiring invasive procedures such as Intrauterine Contraceptive Device (IUCD),
120 subcutaneous implants and vasectomy. Similarly, condoms and OCPs were the most commonly used contraceptive
121 methods while the invasive methods were the least used. Other studies report similar results (Omo-aghoja et al,
122 2009; McMahon et al, 2004). The distinction between invasive and non-invasive methods bothers on such factors
123 as availability, ease of use and requirement of a health professional to use the method.

124 Being aware of a concept does not always suffice for knowledge. There was a marked difference in this study
125 between a high level of awareness (94.4%) and a significantly low level of knowledge (31.2%) about the methods
126 and benefits of using contraceptives. This is a significant departure from many other studies which tended
127 to focus on awareness alone or translate awareness to knowledge (Tayo et al, 2011; ??rji et al, 2005). The
128 challenge of low level of knowledge has been identified as a major factor in the poor adolescent reproductive
129 health status in Nigeria (Federal Ministry of Health, FMOH, Nigeria, 2002). Understanding the methods and
130 benefits of contraception are critical to having motivated users. It has also been noted that motivation is one of
131 the important factors in minimizing failure rates in the utilization of contraception (Egarter et al, 2012).

132 The low level of knowledge also agrees with the small proportion (40.1%) of those who regularly use
133 contraception, differing from a study by ??degbenga and others (2003). It therefore follows that if they know the
134 benefits and how to use contraceptives, they will not chose the risks of unwanted pregnancies, unsafe abortions,
135 disruption of academics and career and possible death. Contraceptive education which is a component of sex
136 education has been proven to improve risky sexual behaviour (Esere, 2008).

137 Current sexual activity among respondents was 45.2%, a figure comparable to Kabir et al's (2004) finding
138 of 53.0% among tertiary students in Kano, northern Nigeria. This high level of sexual activity among the
139 respondents is reflective of the social freedom and interaction among students in tertiary educational institutions.

140 This study did not find a significant association between level of knowledge of contraceptive and cadre of
141 study. However, a higher proportion of respondents with good knowledge were senior students. Similarly,
142 though there was no statistically significant association between level of knowledge and being sexually active,
143 the greater proportion of those who had good knowledge were sexually active students. There was a significant
144 association between level of knowledge and current use of contraceptives. Myer et al (2007) found a significant
145 association between knowledge of emergency contraceptive and its use in South Africa. For those who care to
146 read, contraceptives are usually packed with information leaflets that explain the basis for their use in lay terms.
147 There is also the tendency of contraceptive users to pay more attention to discussions and health information on
148 contraception.

149 V.

150 **7 Conclusion**

151 Poor knowledge and low utilization of contraceptive and high level of sexual activity exist side by side in
152 the tertiary institution. This reality if left unchecked will continue to fuel the negative consequences that
153 follow risky sexual behavior. Health promotion strategies directed at improving contraceptive utilization among
154 sexually active youths are strongly recommended as part of a comprehensive reproductive health intervention in
155 institutions of higher learning in Nigeria. ^{1 2}

¹© 2014 Global Journals Inc. (US)

²Contraception among Tertiary Students: Knowledge, use and Behaviour of Female Undergraduates in Edo State, Nigeria



Figure 1: Box 1 :

1

Variable	respondents Frequency (n = 356)	Percentage
Age (years)		
15 -19	67	18.8
20-24	219	61.5
25-29	45	12.6
30-34	11	3.1
>34	10	2.8
Marital status		
Single	287	80.6
Married	57	16.0
Divorced	2	0.5
Cohabiting	10	2.8
Religion		
Catholic	104	29.2
Orthodox	14	3.9
Pentecostal	187	52.5
Muslim	33	9.3
Others	18	5.1
Level of study		
Junior students and 2 nd year) (1 st	141	39.6
Senior year students (3rd and above)	215	60.4
Institution		
Ambrose Alli University	182	51.1
Auchi Polytechnic	174	48.9
Mean age = 23 (+/-4.2) years; median age = 22 years; modal age = 20 years		

Figure 2: Table 1 :

2

Variable	Frequency (n= 356)	%
Awareness about general contraception		
Yes	336	94.4
No	18	5.1
No response	2	0.6
Awareness about emergency contraception		
Yes	248	69.7

Figure 3: Table 2 :

7 CONCLUSION

3

Variable	Frequency	%
Respondents who have ever used any form of contraceptives n=356		
Yes	202	56.7
No	123	34.6
No response	31	8.7
Methods of contraceptives ever used (Multiple responses) n= 202		
Condoms	116	57.4
Pills (OCPs)	58	28.7
Injectables	16	7.9
IUCD	6	3.0
Implant	5	2.5
Withdrawal	14	6.9
Rhythm	5	2.5
Others (spermicides, diaphragm)	5	2.5
Current use (any method in the last 6 months) of contraceptives n= 356		
Yes	140	39.3
No	180	50.6
No response	36	10.1
Use of emergency contraceptive n= 356		
Yes	38	10.7
No	190	53.4
No response	128	36.0
Types of emergency contraceptive used n= 38		

Figure 4: Table 3 :

4

		contraceptive use			Statistics
		Level of knowledge of contraceptives			
Level of study		Good (%)	Fair (%)	Poor (%)	Total (%)
Junior		48 (33.8)	36 (25.4)	58 (40.8)	142 (100.0)
Senior		64 (51.6)	74 (34.6)	76 (35.5)	214 (100)
Total		112 (31.5)	110 (30.9)	134 (37.6)	356 (100)
Sex in the last six months					
No		48 (30.0)	43 (26.9)	69 (43.1)	160 (100)
Yes		55 (34.2)	57 (35.4)	49 (30.4)	161 (100)
Total		103 (32.1)	100 (31.2)	118 (36.8)	321 (100)
Current use of contraceptives					
No		51 (28.5)	48 (26.8)	80 (44.7)	179 (100)
Yes		47 (33.3)	52 (36.9)	42 (29.8)	141 (100)
Total		98 (30.6)	100 (31.3)	122 (38.1)	320 (100)

Figure 5: Table 4 :

7 CONCLUSION

156 .1 Acknowledgements

157 This study had no funding sponsors. However, we like to appreciate all our colleagues in the department of
158 Community Medicine, ISTH, Irrua for their support and useful suggestions.

159 VII.

160 .2 Competing Interests

161 The authors hereby declare that no competing interests exist.

162 [Orji] , E O Orji .

163 [Mcmahon et al. ()] , S Mcmahon , Lisa Hansen , Janice Mann , Cathy Sevigny , Thomas Wong , Marlene
164 Roache . *Contraception. BMC Women's Health* 2004. (4) p. S25. (Suppl)

165 [Idonijie and Oluba] '2011: A study of knowledge, attitude and practice of contraception among secondary school
166 pupils in Ekpoma'. B O Idonijie , O Oluba , OtamereH . *Journal of Pharmacy and Clinical Science* 2.

167 [Akingba ()] 'Abortion mortality and other health problems in Nigeria'. J B Akingba . *Nigeria Medical Journal*
168 2002. 1 (4) p. .

169 [Adegoke ()] *Adolescents in Africa: Revealing the problems of teenagers in contemporary African society*, A A
170 Adegoke . 2003. Ibadan: Hadassah Publishing.

171 [Katjaviri and Otaala (2003)] *African higher education institution response to HIV/AIDS pandemic. Paper
172 presented at the AAU conference of rectors, chancellors, and presidents of African universities*, P H Katjaviri
173 , B Otaala . 10/11/12atwww.ncbi.nlm.nih.gov 2003. 2003 March, 17. Mauritius.

174 [Available online at www.mentalhelp (2012)] Available online at www.mentalhelp, 3/7/2012.

175 [Puri et al. (2007)] 'Awareness of emergency contraception among female college students in Chandigarh'. S Puri
176 , V Bhatia , H M Swami , A Singh , A Sehgal , A P Kaur . *India. Indian J Med Sci* 2007. Jun. 61 (6) p. .

177 [Macphail et al. ()] 'Contraception use and pregnancy among 15-24 year old South African women: a nationally
178 representative cross-sectional survey'. C Macphail , A E Pettifor , S Pascoe , Rees Hv . *BMC Med* 2007. 5 p.
179 31.

180 [Egarter et al. (2012)] 'Contraceptive counselling and factors affecting women's contraceptive choices: results
181 of the CHOICE study in Austria'. C Egarter , Christoph Grimm , Kazem Nouri Hans-Joachim Ahrendt ,
182 Johannes Bitzer . *Reproductive BioMedicine Online* 2012. June. 16 (7) p. .

183 [Tayo et al. (2011)] 'Contraceptive knowledge and usage among female school students in Lagos'. A Tayo , O
184 Akinola , A Babatunde , A Adewunmi . *Journal of public health and epidemiology* 2011. January. 3 (1) p. .

185 [Alexander et al. ()] *Correlates of premarital relationships among unmarried youth in Pune District, Maharashtra,
186 India. International Family Planning Perspectives*, M Alexander , L Garda , S Kanade , Jejeebhoy , B
187 Ganatra . Accessed12/2/13atwww.highbeam.com 2007.

188 [Israel (2012)] *Determining sample size. University of Florida, institute for Food and Agricultural Sciences*, G
189 Israel . 2012. July 2012. (Available online at www.edis.ifas.ufl)

190 [Esere (2008)] 'Effect of sex education programme on at-risk sexual behaviour of schoolgoing adolescents in
191 Ilorin'. M O Esere . *Afr Health Sci* 2008. June. 8 (2) p. .

192 [Emergency contraception fact sheet ()] *Emergency contraception fact sheet*, www.who.intaccessed2/4/14
193 2014. (World Health Organization)

194 [Weismiller (2004)] *Emergency Contraception: Am Fam Physician*, D Weismiller . 2004. Aug 15. 70 p. .

195 [Omo-Aghoja et al. ()] 'Factors Associated With the Knowledge, Practice and Perceptions of Contraception in
196 Rural Southern Nigeria'. L O Omo-Aghoja , V W Omo-Aghoja , F E C O Aghoja , O Okonofua , C Aghedo
197 , Umueri , Otayohwo , E A Feye-Waboso , K A Onowhakpor , Inikori . *Ghana Med J* 2009. 43 (3) p. .

198 [Uthman ()] 'Geographical variations and contextual effects on age of initiation of sexual intercourse among
199 women in Nigeria: a multilevel and spatial analysis'. O A Uthman . *International Journal of Health
200 Geographics* 2008. 7 p. 27.

201 [Malhotra ()] 'Impact of the sexual revolution: consequences of risky sexual behavior'. S Malhotra . *Journal of
202 American Physicians and Surgeons* 2008. 13 p. 3.

203 [Abiodun ()] 'Knowledge and previous contraceptive use by pregnant teenagers in Ilorin Nigeria'. P A Abiodun
204 , AdisaA F , AderemiI . *Tropical Journal of obstetrics and gynecology* 2001. 18 (2) p. .

205 [Landon et al. ()] 'Knowledge and use of emergency contraception among women in the Western Cape province
206 of South Africa: a crosssectional study'. Myer Landon , Regina Mlobeli , Di Cooper , Jennifer Smit , Chelsea
207 Morroni . *BMC Women's Health* 2007. 7 p. 14.

208 [Tilahun et al. (2010)] 'Knowledge, Attitude and Practice of Emergency Contraceptives Among Adama University
209 Female Students'. D Tilahun , T Assefa , T Belachew . *Ethiop J Health Sci* 2010. November. 20 (3) p.
210 .

7 CONCLUSION

211 [M1 ()] *Knowledge, perception and attitude regarding contraceptives among secondary school learners in*
212 *the Limpopo province, Manena-Netshikweta M1* . Accessed 12/8/12 online at www.uir.unisa.ac.za/bitstream 2007. South Africa. (PHD thesis)

214 [National Population Commission (NPC) [Nigeria] nd ICF Macro ()]b28 *National Population Commission*
215 *(NPC) [Nigeria] and ICF Macro*, 2009. 2008. Abuja, Nigeria. National Populaton Commission and ICF
216 Macro (Nigeria Demographic and Health Survey)

217 [National reproductive health strategic framework and plan ()] *National reproductive health strategic framework*
218 *and plan*, 2002. 2002-2006. Abuja: FMOH. (Federal Ministry of Health, FMOH)

219 [Diaz et al. (2002)] ‘Patients’ Use of the Internet for’. J A Diaz , Md , R A Griffith , Md , J J Ng , Md , S E
220 Reinert , P D Friedmann , A W Moulton . *Medical Information J Gen Intern Med* 2002. March. 17 (3) p. .

221 [Cadmus and Owoaje ()] *Patterns of Contraceptive Use Among Female Undergraduates In The University of*
222 *Ibadan, Nigeria. The Internet Journal of Health*, E Cadmus , E Owoaje . 2009. 10.

223 [Okonkwo et al. (2005)] ‘Perception of peer behaviours regarding sexual health’. P N Okonkwo , A O Fatusi , A
224 L Ilika . *Afr Health Sci* 2005. June. 5 (2) p. .

225 [Baiden and Awini ()] ‘Perception of university students in Ghana about emergency contraception’. Frank Baiden
226 , Elizabeth Awini . *Contraception* 2002. 4 p. .

227 [Chakrapani et al. ()] ‘Prevalence of and Barriers to Dual-Contraceptive Methods Use among Married Men and
228 Women Living with HIV in India’. V Chakrapani , T Kershaw , M Shunmugam , A P Newman , H D Cornman
229 , R Dubrow . *Infect Dis Obstet Gynecol* 2011. 2011. p. 376432.

230 [Adegbenro and Olalekan ()] ‘Prevalence of sexual activity and family-planning use among undergraduates in
231 Southwest Nigeria’. Ca; Adegbenro , A W Olalekan . *European journal of contraception & reproductive health*
232 care 2005. 10 (4) p. .

233 [Programming for Adolescent Health and Development: Report of a WHO/UNFPA/UNICEF Study Group on Programming for
234 Programming for Adolescent Health and Development: Report of a WHO/UNFPA/UNICEF Study Group on
235 Programming for Adolescent Health, 1999. (Technical) (World Health Organization, WHO)

236 [Adegbenga et al. ()] ‘Reproductive knowledge, sexual behaviour and contraceptive use among adolescents in
237 Niger State of Nigeria’. M Adegbenga , Morenike Sunmola , Sunday Dipeolu , Otu D Babalola , Adebayo .
238 *African Journal of Reproductive Health / La Revue Africaine de la Santé* 2003. 7 (1) p. .

239 [Cochran ()] *Sampling technique 2 nd edition* New York, W Cochran . 1963. John Wiley and son Inc.

240 [Mo and Balogun ()] *Sexual activity and contraceptive use among female students of tertiary educational*
241 *institutions in Ilorin*, Abiodun Mo , O R Balogun . Available online at www.ncbi.nlm.nih.gov and accessed 04/07/2012 2009. Nigeria. Contraception. 79 p. .

243 [Mo and Olayinka ()] ‘Sexual activity and contraceptive use among female students of tertiary educational
244 institutions in Ilorin’. Abiodun Mo , P B Olayinka . *Contraception* 2009. 79 (2) p. .

245 [Kabir et al. ()] ‘Sexual behaviour among students in tertiary institutions in Kano, northern Nigeria’. M Kabir
246 , Iliyasu , Is Abubakar , Kabir . *Journal of Community Medicine & Primary Health Care* 2004. 16 (2) p. .

247 [Adedoyin M ()] *Teenage prostitution and child abuse, a survey of Ilorin situation; African journal of medicine*
248 *and medical science*, Adedoyin M , AdegokeA . 1995. 25 p. .

249 [Trends in the Age Composition of College and University Students and Graduates www Statcan.gc.ca Accessed (2010)]
250 ‘Trends in the Age Composition of College and University Students and Graduates www’. *Statcan.gc.ca*
251 Accessed 2010. 1/4/14. (Statistics Canada)

252 [Oswalt ()] *Urie Bronfenbrenner and Child Development. Child and adolescent development*, A Oswalt . 2008.

253 [Mc nab ()] ‘What social media offers to health professionals and citizens’. C Mc nab . *Bulletin of the World Health*
254 *Organization* 2009. 87 p. .

255 [Abramson ()] ‘WINPEPI updated: computer programs for epidemiologists, and their teaching potential’. J
256 Abramson . *Epidemiologic Perspectives & Innovations* 2001. 8 p. 1.