

An Experience of Teaching Bioethics at Secondary Schools in Karachi

Mahjabeen Khan

ABSTRACT

Bioethics is the "critical analysis of emerging moral issues in health". The term was first used to refer to "the moral problems of the life sciences encompassing medicine, biology, environment, population and social sciences". Teaching bioethics is complex and challenging within multi-system educational program as in Pakistan for secondary schools. The objectives are difficult as bioethics teaching require changes in knowledge, skills and attitudes along with strong improvement in moral reasoning. The objectives of the study were to teach bioethics and evaluate comprehension and skills of ethical reasoning in students of secondary school in Karachi. This was a quasi-experimental study conducted in two schools (public and private-sector) of Karachi from January 2007 to December 2009. This was a preliminary study and used simple random sampling to recruit one hundred and ten students. The qualitative analysis of comprehension and skills were evaluated on numeric scales. The study found higher comprehension and skills level in females (66%) compared to male students during class-room sessions.

Key words: *Teaching bioethics. Secondary school. Autonomy. Informed consent. Benefits. Risk. Self-rule.*

Bioethics is the "critical analysis of emerging moral issues in health". The term was first used by the biologist Van Rensselaer Potter in 1971 to refer to "the moral problems of the life sciences encompassing medicine, biology, environment, population and social sciences". Currently, there have been developing standards for bioethics codes in all walks of life. Bioethics education constitutes an integral form of science education. In most of the underprivileged communities bioethics has been taught at higher levels.¹ Norwegian authors have shown that the effect of low parental education is mediated by low education of the index person.²

Teaching bioethics to secondary school has been focused to develop a higher degree of ethical reflection on the part of students, making them capable of evaluating ethically difficult situations and deciding what would be the morally best choice of action. Bioethics teaching requires pedagogies that engage students in participatory and emergent activities to develop multiple dimensions of knowledge. These dimensions include the scientific, personal, social and emotional aspects associated with bioethical issues.

Globally, the conduct of human actions and religious values have been part of bioethics education. In secondary schools there have been several systems running through several boards in Pakistan. These systems broadly have been Urdu medium and the

Cambridge system. *Madrassa*, private and public sector schools have also been another means of categorization based on administrations. The optimums of the education system have not been explored nor identified in Pakistan. Teaching bioethics is complex and challenging within a multi-system educational program as in Pakistan for secondary schools.

The moral development involves thoughts, feelings, and behaviours regarding standards of right and wrong. There have been discrepancies in education delivery to new generations particularly in developing countries such as Pakistan. The perfectionism in the education system is at the lowest level.³ In all developed countries, health is closely correlated with income and education. There has also been a continuing emphasis on bioethics teaching in class rooms.⁴ The fundamental ethical principles can aid decision making in the lives of adolescent and young individuals. Therefore, an intervention was developed as a project for the completion of the requirements to obtain a postgraduate diploma in bioethics from Sindh Institute of Urology and Transplant, affiliated with the University of Karachi. The objectives of this study were to teach bioethics and evaluate comprehension and skills of ethical reasoning in secondary school students at Karachi.

It was a quasi-experimental study conducted in two schools (public and private) of Karachi from January 2007 to December 2009. This was a preliminary study and used simple random sampling. One hundred and ten students of class VIII and IX of either gender, were recruited for the intervention of bioethics education in the class-room. A letter of request was sent to Principals of schools, education department and parents for permission to teach additional topics on bioethics. These

Clinical Trials Unit, Dow University of Health Sciences, Karachi.

Correspondence: Dr. Mahjabeen Khan, C-98, Bostan-e-Rafi Society, Jamia Millia Road, Malir, Karachi.

E-mail: mahjabeen.khan@duhs.edu.pk

Received June 08, 2011; accepted February 24, 2012.

sessions were only for the sensitization of bioethical issues related to a few walks of life. The selection of topics were based on simple and measurable issues in bioethics. There were multiple methods used for teaching purposes, which included interactive lectures, structured discussions, guided readings (handouts/news papers), case studies and role plays (scenario based). The teaching plan included presentation on overheads for 10 minutes, interactive discussion for 15 minutes, feedback after each session to assess the modules and teaching. The final assessment was made through a proforma, developed for this purpose.

The mean age of the students was 12.5 ± 1.5 years. Male participants were 69 (62.7%). Most of the students' mothers (80) were unable to read or write (72.7%). The qualitative analysis of comprehension and skills were evaluated on a numeric scale to quantify the comprehension and skills of reasoning for ethical issues. The sessions held showed comprehension by students on introduction of bioethics ($n = 63$, 57.3%), advantages of bioethics ($n = 68$, 61.8%), respect for a person ($n = 67$, 60.9%), self-rule ($n = 57$, 51.8%), informed consent 70 (63.6%) and organ transplant ethics ($n=73$, 66.4%). A comparative analysis has also been performed between male and female students for comprehension of different aspects of bioethics as shown in Table I. A Chi-square test was used for comparison at a significance level of

$p < 0.05$. The test value with degree of freedom and significant p-value have been shown in Table I. There was a significant difference between the genders ($p < 0.05$) in all areas of comprehension scales assessment on bioethics issues except knowledge of bioethics which was insignificant at test value 3.242 (1) with $p = 0.0717$. The comprehension regarding respect of autonomy was esteemed by all female (41) compared to male students ($p < 0.0001$, $\chi^2 = 41.949$;df;1). The informed consent knowledge was enunciated correctly by all female students equated to males ($p < 0.0001$, $\chi^2 = 37.350$;df;1). Similarly, the study found that the role of benefit and risk in informed consent and distributive justice in health care was best expressed by female students ($p < 0.0001$). These reflections provide greater emphasis to focus primarily on class room bioethics teaching at secondary school with various modes of instructions as used in this intervention.

Bioethics education in the classroom provides us an open house for discussion in favour and against on ethical issues. The frame works of ethical decision were based on no harm to others and benefits to maximum people. The mechanism was to develop ethical reasoning at secondary school level. An early exposure in class room teaching and open house discussion with analytical reasoning will help youngsters in future decisions making.

Table I: Comparison of comprehension scales assessment on bioethical issues ($n = 110$).

Quantification of comprehension scales assessment on bioethical issues	Male		Female		Chi-square test value (df)	p-value*
	Number (n)	Percentage (%)	Number (n)	Percentage (%)		
What is Bioethics?						
Yes	35	50.7	28	68.3	3.244 (1)	0.0717
No	34	49.3	13	31.7		
Advantages of bioethics recall						
Yes	27	39.1	41	100	40.371 (1)	< 0.0001
No	42	60.9	0	0		
Respect for autonomy						
Yes	26	37.7	41	100	41.949 (1)	< 0.0001
No	43	62.3	0	0		
Comprehension of self-rule						
Yes	16	32.2	41	100	60.775 (1)	< 0.0001
No	53	76.8	0	0		
Informed consent?						
Yes	29	42	41	100	37.350 (1)	< 0.0001
No	40	56	0	0		
Does oral consent for surgery enough?						
Yes	32	46.4	41	100	33.129 (1)	< 0.0001
No	37	53.6	0	0		
Distributive justice in health care						
Yes	29	42	41	100	37.350 (1)	< 0.0001
No	40	58	0	0		
All benefits and risk should be discussed with patients						
Yes	22	31.9	41	100	48.762 (1)	< 0.0001
No	47	68.1	0	0		
Organ transplant?						
Yes	32	46.4	41	100	33-129 (1)	< 0.0001
No	37	53.6	0	0		

* p-value < 0.05 considered as significant

Bioethics teaching includes the ability to reason, to understand the consequences and to make choices about actions. Pakistan needs a long-term strategy for our nation starting from secondary education on bioethics. Some case studies have been reported in bioethical education for undergraduates, postgraduates, nurses and specialists for bioethical maturity.⁵ UNESCO has started bioethical teaching in cross-cultural populations.

There has been a scarcity of educational activities in Pakistan. Currently, Pakistan has been in the phase of infancy for bioethics teaching. There is a need for bioethics education for trainers, teachers in the society at secondary, higher secondary, graduate and professional levels. It is the professional duty of all adult literates to educate others with regard to bioethical issues.

The comparative analysis has shown that the comprehension of different aspects of bioethical issues were described better on case based discussion by female students compared to males. The attitude of accepting both views in an ethical dilemma was better reasoned by female in most of the aspects of ethical problems. There has been a need to develop a place for

ethical teaching in our society as others have identified these as well.⁴

In future, the academic environment and ethical values in schools need to be promoted for bioethical maturity. This preliminary study concluded that bioethics teaching in secondary schools showed that comprehension and skills developed during class-room teaching by structured sessions were higher (66%) in female students as compared to male students.

REFERENCES

1. Benatar S. Research ethics committees in Africa: building capacity. *PLoS Med* 2007; **4**:e135; author reply e6.
2. Bonneux L. From evidence based bioethics to evidence based social policies. *Eur J Epidemiol* 2007; **22**:483-5.
3. Brodwin P. Mixed methods and bioethics pedagogy: suggestions for future research. *Am J Bioeth* 2008; **8**:17-9; author reply W1-2.
4. Byk C. Does the continuing importance of bioethics teaching sacrifice the need to create a new academic humanism? *J Int Bioethique* 2010; **21**:15-7, 1-3.
5. Aires CP, Hugo FN, Rosalen PL, Marcondes FK. Teaching of bioethics in dental graduate programs in Brazil. *Braz Oral Res* 2006; **20**:285-9.

