

AWARENESS REGARDING BIOETHICAL ISSUES AMONG THE STUDENTS AND FACULTY OF HAZARA UNIVERSITY MANSEHRA, PAKISTAN

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ABSTRACT

Objective: To determine the awareness level regarding bioethical issues among graduate and Post graduate students and faculty of Hazara University Mansehra Pakistan.

Methodology: The study was carried out at the campus of Hazara University Mansehra, Pakistan. It was a questionnaire based survey.

Results: Most of the participants were graduate students having relatively better knowledge of Science and Technology as 90.4% of them were found to be familiar with the term "Bioethics". It was encouraging to note that students at this level of education had positive opinion about the role of Science and Technology and had accepted its importance in their daily lives. The fact that the students are eager to learn more about bioethical issues was borne out by our data as 96% students were of the opinion that Bioethics should be taught regularly in the classes. There was a general agreement among the respondents that the government's policies on Bioethical issues are not satisfactory and that the issues need to be addressed; albeit within the frame work of religious (Islamic) teachings. The survey indicated that Cloning, Organ donation, GMO's, Contraception, Abortion and Stem Cell Research are regarded as the most important bioethical issues.

Conclusion: Curriculum of educational institutions including Universities, Colleges and Schools should include appropriate courses on bioethics. The society in general needs to debate the issues through conferences, seminars, workshops and media for enhancing awareness, allaying fears and formulating opinions based on correct information.

KEY WORDS: Bioethics, Organ donation, Contraception, GMO's, Stem Cells, Religion.

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INTRODUCTION

Hazara University is located in the North-East of Pakistan. The region has remained a melting pot of civilizations (Budahist, Chinese, Indian, Islamic) and cultures through-out history. Established in 2001, the university currently has 23 academic departments and around 5000 on-campus students. More than 69000 students are enrolled in educational institutions affiliated with Hazara University which are spread through-out the Hazara region of Pakistan.

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The emergence of modern technologies such as Recombinant DNA, Stem Cell Research, Organ Transplantation, Gene Therapy, Reproductive Technologies etc have raised new ethical questions, rather "Dilemmas", for mankind. With technological development and advancement in social, economic, technological and educational spheres, such ethical questions have become more significant in Pakistan as well. Attention is being focused on ethical questions mainly as a result of the application of biomedical technologies¹ such as organ transplantation. The medical community has been pioneers in debating and addressing the Bioethical questions. However, bioethical issues pertaining to GMO's, Cloning, Stem Cell Research etc. which are not directly concerned with clinical practice, have received limited attention.

The attention received by Bioethical issues in today's world can be assessed from the fact that approximately 206 technical journals are being published around the world². In Pakistan, Aga Khan University Karachi became the first Pakistani university to introduce biomedical ethics in the curriculum of medical students³ in 1984.

National Bioethics Committee⁴ was formed by the Federal Health Ministry in 2004 but its overall functioning has been rather disappointing due to lack of interest by the government authorities. Karachi Bioethics Group was formed couple of years ago which meets regularly where important ethical issues are discussed. More recently a Bioethics Group has also been formed at Shaukat Khanum Cancer Hospital and Research Center, Lahore.

The first Pakistani Journal dedicated to the subject i.e. "The Pakistan Journal of Medical Ethics" was started in late 1990's only to be discontinued soon. The Journal has been restarted recently. To sensitize the general public to bioethical issues, the Sindh Institute of Urology and Transplantation (SIUT) Karachi has started a private center on Bioethics called the Centre of Biomedical Ethics and Culture (CBEC).

METHODOLOGY

The survey was conducted in five academic Departments of Hazara University i.e. Departments of Microbiology, Botany, Biochemistry, Genetics and Law. Four of the departments are concerned with life sciences while the department of Law was selected to assess awareness regarding bioethics among students of arts/humanities in comparison to students of life sciences.

A questionnaire consisting of 29 questions was distributed among 200 students and faculty members of the above mentioned departments. One hundred and sixty eight (168) responses were received. The questionnaire was administered by the authors and some trained students. Computer softwares SPSS and Microsoft Excel were used to analyze the data. This manuscript reports the results of only one set of questions (Table-I).

RESULTS

Of the 200 students and faculty members who were surveyed, 168 (84%) responded. We have no way of assessing the demographics of the non-responders and would be speculating if we were to try to do so without undertaking another survey of the non-responders.

Most respondents (56.7%) reported that Science and technology has a great impact on their daily life. More than 90% of the respondents were familiar with the term Bioethics and suggested that it should be a part of the curriculum. (96.5%) Nearly 83.9% of respondents felt that religion provides ideal framework for bioethical discussions. Table-I provides a summary of the free-form text responses to Survey. Approximately 83.9% of the students responded that religion was very important in their lives so it should be the ideal basis for bioethical discussion but on the other hand 6% believed that existing state laws could provide and ideal framework. About 55.9% responded that that the government has not come up with clear policies in response to the bioethical issues. In general terms there was a high degree of acceptability towards products of Genetic

Table-I: Participant's views on Bioethical Issues

S. No.	Question	Yes Number (%)	No Number (%)	Don't Know Number (%)
1.	Do you think S&T do more harm than good, more good than harm, or about the same of each?	More good 95 (56.5)	About the same 62 (36.9)	More harm 11 (6.5)
2.	Which of these best describes your interest in S&T:	Very much interested 78 (46.4)	Interested 88 (52.3)	Not interested 2 (1.3)
3.	Are you familiar with the term Bioethics?	152 (90.4)	16 (9.5)	00 (00)
4.	Have you ever discussed Bioethics in the class?	87 (51.8)	81 (48.2)	00 (00)
5.	Should Bioethics be regularly taught in the class	162 (96.5)	00 (00)	6 (3.5)
6.	Do you know what kinds of GM foods have been introduced in Pakistan?	85 (50.6)	27 (16.1)	56 (33.3)
7.	Should the government allow organ donation in Pakistan?	139 (82.7)	21 (12.5)	08 (4.7)
8.	If your father needs a kidney to live, Will you donate one of your own kidneys for him?	164 (97.6)	00 (00)	04 (2.4)
9.	If your father needs a kidney would you be willing "buy" one from the black market?	48 (28.6)	102 (60.7)	18 (10.7)
10.	Should Pakistan freely allow Abortion?	124 (73.8)	44 (26.2)	00 (00)
11.	Are you aware of the implications of Stem Cell Technology?	71 (42.3)	32 (19)	65 (38.7)
12.	The Government should introduce Stem Cells Technology in Pakistan.	108 (64.3)	02 (1.2)	58 (34.5)
13.	Should Pakistan allow Cloning?	82 (48.8)	86 (51.2)	00 (00)

Engineering and Biotechnology provided that there was no risk to the environment or health. Unconditional approval rate was 43%, while another 47.5% would approve Biotechnology or Genetic Engineering products under certain conditions. Only 5.9% respondents disapproved such products.

In response to the question about the permission of doing cloning in Pakistan, 48.8% expressed their support but 50.6% opposed the idea. About 21.8% participants considered organ donation as the most important bioethical issue. While 98.2% of the participants responded that they would donate their own kidney to a parent requiring a donation, but in case of non-match of their own kidney, they were willing to buy kidneys from the black market to save the life of their parents (29%) and 61% opposed this idea. Most of the participants were against the abortion except for

special reasons such as danger to the life of mother or abnormality of the fetus.

DISCUSSION

According to Akhtar (2002) recent advances in treatments, therapies and technologies are for the betterment of all populations⁵. In current study most of the respondents (46.7%) expressed keen interest in the development in science and technology and believed that such developments would be beneficial to their lives. Only 1.3% respondents stated that they had absolutely no interest in Science & Technology.

Regarding the subject of Bioethics 90.4% of the participants were "aware" of the term Bioethics (Table-I). The awareness rate for respondents from various departments surveyed was, 71% for Microbiology, 100% for Genetics, 96% for Biochemistry, 95% for Botany and 40% for

Table-II: Ranking of most important bioethical issues (as assigned by respondents)

Cloning	25%
Gene Therapy	23%
Organ donation	21%
Introduction of GMO's	17%
Abortion	12%
Euthanasia	1%
Genetic Screening	1%
Stem Cells	0%
Any other (please write)	0%

Law. The reason for high level of awareness in the first four departments was that the respondents had heard the term from their teachers or colleagues. This is especially true for students of Genetics department where Bioethics is a part of the curriculum. These percentages however do not reflect awareness about bioethical questions at the societal level since literacy among the masses is very low (47%) in Pakistan and Higher education is even lower. Respondents from Law department, where students study for their Bachelor or Master Degrees in Law, exhibited low level of awareness in comparison to students of life sciences. Pakistan Medical Research Council started collaboration with national and international partners in early 2000 and organized a series of seminars and workshops to create awareness for bioethics.⁶

Hyder and Nadeem reported that the unavailability of effective policy and legislation related to bioethics have bad effect on biology profession.⁷ Ignoring the above comment, 6% of students suggested that state laws should be the ideal basis for Bioethical discussion and 83.9% of the students responded that religion was very important in their lives hence it forms an ideal basis for bioethical discussions. In other words a vast majority of respondents would prefer to settle ethical questions in accordance with teachings of Islam. The role of religion in the Islamic Republic of Pakistan has been emphasized in the literature.⁸⁻¹⁰

Table-III: Profile of respondents (n=168)

S.No	Parameter	No. (%)			
1.	Age (in years)	< 20	12 (7.1)		
		20-24	114 (67.8)		
		25-29	30 (17.8)		
		30-34	6 (3.6)		
		35-39	2 (1.2)		
		40-44	0 (00)		
		45-50	0 (00)		
2.	Sex	51 <	4 (2.4)		
		Male	82 (48.8)		
		Female	86 (51.2)		
		3.	Status	Students	136 (80.9)
				Teachers	32 (65.5)
4.	Educational Status	Graduate	22 (13)		
		Post-graduate	110 (65.5)		
		Doctorate	36 (21.4)		

From the responses regarding the role of religion in people lives and in settling Bioethical issues, it can be concluded that the government should consult Ulema and Islamic Scholars while framing any laws or regulations. The respondents differed in their opinion regarding "the most important Bio-ethical issue" Ethical issues regarded as "the most important" are listed below (Table-II).

Fifty six percent (55.9%) of those surveyed were dissatisfied with the government's policies on bioethical issues. It is not surprising in view of the fact that the government has not come up with clear policies in response to the bioethical issues raised by the emerging technologies and hardly any policies or regulations exist on GMO's, Organ donation, Cloning, Gene Therapy and Stem Cell Research etc.

In general terms there was a high degree of acceptability towards products of Genetic Engineering and Biotechnology provided that there was no risk to the environment or health.

Unconditional approval rate was 43%, while another 47.5% would approve Biotechnology or Genetic Engineering products under certain safeguards. Only 5.9% respondents disapproved such products altogether.

In response to the question "Should Pakistan allow cloning?" 48.8% expressed their support, 50.6% *opposed* the idea (Table-I). At this point it may be mentioned that people's technical knowledge about Cloning and other modern technologies and their implications is low. A correct picture could only emerge when all the pros and cons are explained to the people. This can only be possible after an open debate in the print and electronic media and through other forums.

Looking at the news media, Transplantation, Donation, Sale and Theft of organs are hot issues in Pakistan. This was confirmed in the ranking assigned to the issue of organ donation by our respondents. Twenty two percent (21.8%) participants considered organ donation as the most important bioethical issue, 98.2% of the participants responded that they would donate their own kidney to a parent requiring a donation (Table-I). Twenty nine percent of the respondents were willing to buy kidneys from the black market to save the life of their parents in case their own kidney did not match. However 61% were opposed the idea of purchasing kidney from the black market (Table-I). Same question was asked from the students of a local medical college in Karachi, in which 60% students felt it was unethical for a person to sell his kidney while 37% thought there was no harm in such a practice.¹¹ A previous survey conducted by Qidwai *et al*³ had concluded that "a significant number of the respondents considered it appropriate for a rich person to purchase kidney from a poor person for transplantation". This conclusion would appear to be different from the findings of the present survey. It must however, be noted that Qidwai *et al* had conducted their survey on patients who were directly faced with a life/death situation rather than healthy individuals. A significant number of the respondents were in favour of allowing organ donation in Pakistan (Table-I).

The respondents were generally opposed to abortion except for special reasons such as danger to the life of mother or abnormality of the fetus. In another study by Gilani *et al* reported that majority of parents of children having disorders, were in favor of abortion in case of an affected fetus.¹²

CONCLUSIONS

It can be concluded from the results that awareness level regarding Bioethical issues is fairly high among the students and faculty of Hazara University. However, this can not be expected to mirror the awareness level in the society at large since literacy level among the masses is low (47%) and higher education is even lower. We conclude that the educated youth in Pakistani society are receptive to modern technologies. However, the government needs to formulate clear policies, laws, rules and regulations through open debate.

RECOMMENDATIONS

The following recommendations are put forth for enhancing the level of awareness among the university students and faculty:

- * Awareness needs to be created at all levels so that people can formulate "considered opinion" rather than blindly following others. However, university students / faculty are, actual or potential opinion leaders, therefore they need to be well aware of the emerging technologies and their ethical consequences.
- * Bioethical issues should be openly debated through Seminars, Conferences and Workshops etc. This will encourage interaction between experts, academicians, researchers, students, policy makers etc.
- * Curricula of educational institutions including Universities, colleges and schools should include advanced or introductory courses on bioethics. Every professional organization, whether it is related to Biological sciences or not must have their own Code of Ethics.

- * The government should know its responsibilities and should provide the necessary legal and regulatory framework for dealing with bioethical issues and concerns.
- * Ulemas and religious scholars should be consulted for their opinion while formulating laws concerning bioethical issues.
- * In case the authorities are serious to promote bioethics and ensure its implementation in the health sector, it must activate National Bioethics Committee constituted by Federal Health Ministry Government of Pakistan.

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