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Acceptance of a Genetic Service in Sri Lanka : A Student Viewpoint

by

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SUMMARY. The attitudes of a group of final year medical students of the Faculty of Medicine, Colombo, on the establishment of a Genetic Service with genetic counselling, prenatal diagnosis and therapeutic abortion as its main components, have been analysed. More than 70% of the respondents reacted positively to various aspects of the three genetic components. Of the variables sex, religion and awareness of the existence of a Human Genetics Unit providing genetic counselling, only religion had a significant impact on the response "genetic counselling is both a useful and necessary medical service."

INTRODUCTION

Both the developed and the developing world have experienced an improvement in the standard of health care due to successful public health measures, medical advances in the form of vaccines and antibiotics, improvements in diagnostic and curative medical technology, and the upliftment of socio-economic standards. The incidence of diseases due to infections has diminished worldwide, while genetic diseases seem to contribute a greater share to the prevalent medical problems.[2] These epidemiological changes seen in recent years have compelled government agencies and physicians in countries like the United States of America to retarget their strategies in order to combat genetic disease.[3]

In recent years changes in the health sphere have led to improved standards of living in Colombo, Sri Lanka's largest city, with a population of about 1.7 million. A greater emphasis on the preventive aspects of health care and better curative efforts, as exemplified in the Government's 1980 Charter for Health Development, and recent foreign aid programmes, have contributed to a lower infant mortality rate, higher life expectancy and reduced incidence of disease due to environmental causes.[1] At the same time the Human Genetics Unit in Colombo has experienced an increased number of referrals for genetic problems.

Genetic counselling, prenatal diagnosis and therapeutic abortion form the three important components of a successful Genetic Programme. In Sri Lanka, genetic counselling is presently practiced on a purely preventive basis in the absence of it more potent components, prenatal diagnosis and thereapeutic abortion. This is due to strictly enforced legislation concerning abortion.

In this environment, the views of a batch of final year medical students from the Faculty of Medicine, Colombo, on genetic counselling, prenatal diagnosis and therapeutic abortion may provide some insight into the development of a National, Genetic Programme. It would reveal the attitudes of a group of young, unmarried, potential doctors, expressing themselves from a moral and social point of view regarding some important components of Human Genetics.

MATERIALS AND METHODS

The questionaire (Appendix) which was in English was distributed by the author to the entire batch of 143 final year medical students. They were answered anonymously and collected after completion on one day in May 1986. The students were sitting their final examination in June the same year.

The respondents were asked whether or not they had received training in Human Genetics and whether or not they were aware of the existence of a Human Genetics Unit providing genetic counselling. All the students were not married and were between 20 and 30 years of age. Fifty one percent were males. Buddhists at 66% represented the largest religious group with 13% Roman Catholics, 9% Hindus, 7% Muslims and 5% Christians. All had taken a course in Genetics and 81% were aware of the existence of a Unit which provided genetic counselling.

Univariate analysis was used to examine the demographic characteristics of the sample and overall attitudes towards genetic counselling, amniocentesis and therapeutic abortion. Stepwise multiple logistic regression analysis (MLR) was then performed, with the student's attitudes towards these issues as dependent variables and the demographic and experiential factors as independent variables. $p<0.05$ was considered significant. Univariate analysis was also performed on those variables demonstrated by MLR to significantly affect student attitudes towards a Genetic Service.

RESULTS

Univariate statistical analysis revealed that the majority of students in Colombo agreed with the clinical applications of genetic counselling, amniocentesis and therapeutic abortion (Table 1).

Ninety three percent of the students felt that genetic counselling resulted in "more responsible reproductive decisions". Eighty two percent felt that genetic counselling should be offered as a part of prenatal and family planning services. Although the entire sample had studied genetics in medical school, only 85% thought that genetic counselling "is both a useful and necessary medical service" and only 81% were aware of the existence of an Human Genetics Unit providing a genetic counselling service.

TABLE 1. Attitudes of Sri Lankan Medical Students to Genetic Counselling, Prenatal Diagnosis and Therapeutic Abortion

	Percentage of students supporting service
Genetic Counselling	
results in more responsible reproductive decisions	93%
should be offered as a part of prenatal and family planning services	82%
is both a useful and necessary medical service	85%
Amniocentesis	
significantly affects the potential usefulness of genetic counselling	75%
is appropriate if a genetic disorder like Down Syndrome has already appeared in the family	89%
should be offered to all pregnant women over age 35 years if there is legal provision for an abortion	72%
should be offered to satisfy curiosity about the sex of the foetus	32%
Therapeutic Abortion	
might be appropriate if a genetic disorder like Down Syndrome is detected by amniocentesis	69%
should be legalised and available when a genetic defect like Down Syndrome is detected	88%

The students agreed that amniocentesis was valuable for good genetic counselling with 75% accepting the potential usefulness of genetic counselling, and with a greater percentage endorsing its appropriateness if a genetic disorder like Down Syndrome had already appeared in the family (89%). However, even if abortion was legalised only 72% believed that amniocentesis should be offered to all pregnant women over age 35 years. Offering amniocentesis to satisfy prenatal curiosity about the sex of the foetus found favour in only 32% of the respondents.

On the component of therapeutic abortion in a Genetic Service, 88% favoured the provision of therapeutic abortion by law when a genetic defect like Down Syndrome was detected prenatally. However, when questioned specifically about the appropriateness of therapeutic abortion " if by amniocentesis a genetic defect like Down syndrome was detected" the response was a more conservative 69%, with 19% not sure and 12% not in favour.

Stepwise MLR was carried out to determine whether any of the demographic variables religion and sex or the experiential variable of "awareness of the existence of a Human Genetics Unit providing genetic counselling" had any influence on the responses to questions concerning the three aspects of the Genetic Service (Table 2,3 and 4).

TABLE 2. Attitudes to a Genetic Service by Religion

	RELIGION (%)					
	Buddhist	Roman Catholic	Christian	Hindu	Muslim	P
Genetic Counselling						
results in more responsible reproductive decisions	93	95	100	85	100	N.S.
should be offered as a part of prenatal and family planning services	79	84	100	85	100	N.S.
is both a useful and necessary medical service	86	89	100	54	89	0.042*
Amniocentesis						
significantly affects the potential usefulness of genetic counselling	78	79	71	54	78	N.S.
is appropriate if a genetic disorder like Down Syndrome has appeared in the family	83	89	100	85	100	N.S.
should be offered to all pregnant women over age 35 years if there is legal provision for an abortion	69	74	86	77	78	N.S.
should be offered to satisfy curiosity about the sex of the foetus	35	16	29	31	33	N.S.
Therapeutic abortion						
might be appropriate if a genetic disorder like Down Syndrome is detected by amniocentesis	81	88	100	91	83	N.S.
should be legalised and available when a genetic defect like Down Syndrome is detected	91	74	86	92	78	N.S.

*P < 0.05

TABLE 3. Attitudes to a Genetic Service by Sex

	SEX (%)		
	Male	Female	P
Genetic Counselling			
results in more responsible reproductive decisions	95	91	N.S.
should be offered as a part of prenatal and family planning services	86	78	N.S.
is both a useful and necessary medical service	86	83	N.S.
Amniocentesis			
significantly affects the potential usefulness of genetic counselling	77	74	N.S.
is appropriate if a genetic disorder like Down Syndrome has appeared in the family	90	88	N.S.
should be offered to all pregnant women over age 35 years if there is legal provision for an abortion	75	68	N.S.
should be offered to satisfy curiosity about the sex of the foetus	27	36	N.S.
Therapeutic abortion			
might be appropriate if a genetic disorder like Down Syndrome is detected by amniocentesis	90	77	N.S.
should be legalised and available when a genetic defect like Down Syndrome is detected	89	87	N.S.

TABLE 4. Attitudes to a Genetic Service by Awareness of Existence of a Human Genetics Unit

	AWARENESS(%) Yes	No	P
Genetic Counselling			
results in more responsible reproductive decisions	93	93	N.S.
should be offered as a part of prenatal and family planning services	84	78	N.S.
is both a useful and necessary medical service	84	85	N.S.
Amniocentesis			
significantly affects the potential usefulness of genetic counselling	82	93	N.S.
is appropriate if a genetic disorder like Down Syndrome has appeared in the family	90	89	N.S.
should be offered to all pregnant women over age 35 years if there is legal provision for an abortion	72	70	N.S.
should be offered to satisfy curiosity about the sex of the foetus	30	37	N.S.
Therapeutic abortion			
might be appropriate if a genetic disorder like Down Syndrome is detected by amniocentesis	87	79	N.S.
should be legalised and available when a genetic defect like Down Syndrome is detected	89	85	N.S.

Only religion made a significant impact (P=0.042) on the usefulness and necessity of a genetic counselling service, with all the protestant Christians assenting followed by Roman Catholics (89%), Muslims (88%), Buddhists (86%) and Hindus (54%) (Table 2).

DISCUSSION

The Sri Lankan government in its quest to provide "Health for All by the Year 2000", has developed the National Health Development Network,[1] with many of the priority areas identified having a strong genetic component. In this context a survey of a group of final year medical students is useful, as it provides another viewpoint regarding provision of a Genetic Service in Sri Lanka.

The respondents in this study reacted in a remarkably positive manner (>70%) to questions on all aspects of the three components studied, except to the one seeking a response on the appropriateness of amniocentesis in satisfying prenatal curiosity (Table 1). This endorses the favourable climate for the acceptance of such a service in the youngest cohort of the medical profession.

Surprisingly a high percentage of all religious denominations were agreeable to the provision of a genetic service with genetic counselling, prenatal diagnosis and therapeutic abortion (Table 2). In response to the question of the "usefulness and necessity of a genetic counselling service", there was a significant excess of Protestant Christians who were most favourable to it, with Roman Catholics next in favour followed by Muslims and Buddhists, with the Hindus least agreeable. This pattern of expression of the Christians and Roman Catholics seems to be in keeping with their religious teachings; while being conscious of the problem of genetic defects with its heavy toll on society, they would, given the choice, prefer the use of more preventive rather than therapeutic methods in dealing with it.

Females on the whole were less agreeable than the males to all aspects of a genetic service except in their attitudes towards satisfying prenatal curiosity using amniocentesis, where, although the positive responses were poor, they were in excess (Table 3). This conservative approach is probaly due to the female adopting a cautious attitude, being the ones directly involved most of the time in a Genetic Service.

The only experiential variable "awareness of the existence of a Human Genetics Unit providing genetic counselling" did not seem to affect the views of the respondents (Table 4). This may be due to the lack of proper perception of genetic defects, coupled with inadequate clinical experience and training in this aspect of of the medical curriculum, or due to more powerful moral and social thoughts on the issues.

This study suggests that the Sri Lankan medical students on the threshold of graduation were very receptive to the provision of a Genetic Service while showing as expected, a greater restraint towards prenatal sexing just to satisfy curiosity. On the whole many of the student attitudes towards a Genetic Service were not significantly altered by the student's religious and social background.

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APPENDIX

A Study of the Attitudes toward and use of Genetic counselling, Amniocentesis and Therapeutic Abortion

1. Age : .....
2. Sex : .....
3. Marital Status : .....
4. If married No. of children : .....
5. Religion : .....

    1. Buddhist
    2. Roman Catholic
    3. Christian
    4. Hindu
    5. Muslim

Please indicate your position in response to the following items:

6. Genetic Counselling results in more responsible reproductive decisions Yes/No
7. Genetic Counselling should be offered as part of prenatal and family planning service Yes/No
8. Genetic Counselling is both a useful and necessary medical service Yes/No
9. Amniocentesis significantly affects the potential usefulness of genetic counselling Yes/No
10. Amniocentesis is a good idea if a genetic disorder like Down Syndrome has already appeared in a family Yes/No
11. Amniocentesis should be offered to all pregnant women over age of 35 years if there is legal provision for a therapeutic abortion Yes/No
12. Amniocentesis should be offered to satisfy prenatal curiosity about sex of foetus Yes/No
13. If by amniocentesis a genetic defect like Down Syndrome was detected an abortion might be appropriate Yes/No
14. If your answer to number 13 is "NO", is your response due to (check one)

    the importance of religion in your life .....

    your personal philosophy .....

    other (please specify)
15. Do you think there should be provision made in the Law to carry out a therapeutic abortion when a genetic defect like Down Syndrome is detected prenatally ? Yes/No
16. Should genetic counselling be offered as a regular part of medical training ? Yes/No
17. Did you have a course in genetics at Medical School ? Yes/No
18. Are you aware of the existence of a Human Genetics Unit which provides Genetic Counselling? Yes/No

Thank you for providing this very important and useful information