Psychology, Health & Medicine

ISSN: 1354-8506 (Print) 1465-3966 (Online) Journal homepage: www.tandfonline.com/journals/cphm20

Patient characteristics and the allocation of scarce medical resources

A. Furnham, C. Thomas & K. V. Petrides

To cite this article: A. Furnham, C. Thomas & K. V. Petrides (2002) Patient characteristics and the allocation of scarce medical resources, Psychology, Health & Medicine, 7:1, 99-106, DOI: 10.1080/13548500120101595

To link to this article: https://doi.org/10.1080/13548500120101595

PSYCHOLOGY, HEALTH & MEDICINE, VOL. 7, NO. 1, 2002

BrunnerRoutledge Taylor & Francis healthsciences

Patient characteristics and the allocation of scarce medical resources

A. FURNHAM, C. THOMAS & K. V. PETRIDES
Department of Psychology, University College London, London, UK

Abstract *This was the sixth study in a programmatic series (Furnham, 1996; Furnham & Briggs, 1993; Furnham & Ofstein, 1997; Furnham* et al., *1999; 2000) that examined the effects of participant personality and patient characteristics on the preferential allocation of scarce medical resources. Patients differed in gender, personality, mental illness and intelligence. Participants favoured extraverts over introverts; those with no history of mental illness over those with a history; and the highly intelligent over the moderately intelligent. There was little evidence that the personality traits of participants affected their ratings of patients. Implications for socio-moral and medical ethical decision making are considered. Both the limitations of this methodology and the implications of these findings for real ethical committees are discussed.*

Introduction

Every health system is inevitably faced with the need to decide (explicitly and formally, or implicitly and informally) what proportion of available resources should be spent on health care *and* how those resources should be apportioned. Issues include which diseases and disabilities are to be given priority, which individuals or groups are given priority as well as the cost-effectiveness of different forms of treatment. Doctors have to make various types of allocation decision: some alone and sometimes assisted by colleagues or committees. Brody (1981, p. 214) uses kidney machine allocation as an example to spell out various ethical issues:

1. Which one of two patients should get access to a kidney machine when only one is available.
2. Whether more kidney machines should be produced, or whether that same money should go into better prevention of kidney disease, based on our existing medical technology.
3. Whether we should spend money to support treatment and prevention of kidney disease based on current knowledge, or should try to expand that knowledge by funding expanded kidney research.
4. Whether we should fund kidney research, or fund research into some other category of disease or handicap like heart disease or stroke.
5. Whether we should try to improve people's lives by funding medical care and research, or by funding other social programs such as education, food and housing.

Address for correspondence: Professor A. Furnham, Department of Psychology, University College London, 26 Bedford Way, London WC1 OAP, UK. Tel: +44 020 7679 2000; Fax: +44 020 7436 4276; E-mail: a.furnham@ucl.ac.uk

ISSN 1354-8506 print/ISSN 1465-3966 online/02/010099-08 © Taylor & Francis Ltd
DOI: 10.1080/13548500120101595

Basic health care is seen to be a 'public' rather than a 'private' good. Charlesworth (1993) noted that ethical values play a part at every level of the allocation process, vis-à-vis governmental, institutional, clinical unit and individual. He argued that utilitarian approaches (to maximize good and give the greatest happiness to the greatest number) have become the 'darling of the health-care resource allocation experts' despite being 'in considerable disarray as an ethical theory' (p. 112). He further noted that utilitarians believe a health system is good (effective and efficient) regardless of the actual freedom to choose by the individual. In this sense, utilitarianism may be seen to be illiberal and paternalistic.

Brody (1981) spelt out five slightly different principles that may be used to make allocation decisions:

> Who merits or deserves it the most; Who has contributed the most to society; Who has the greatest ability to pay—in money or in other goods desired in the marketplace; Who needs it the most; Similar treatment for similar cases.

Earlier, Rescher (1969) specified five different factors that should help decision makers make just prioritizing decisions. These include: *relative likelihood of success*—is the treatment likely to be successful? *Expectancy of future life*—assuming the 'success' of the treatment, how much longer does the patient stand a good chance of survival (75% or better) considering his/her age and general condition? *Family role*—to what extent does the patient have responsibilities to others in his/her immediate family? *Social contributions rendered*—are the patient's past services to his/her society outstanding, substantial, average, etc.? *Social contributions to be rendered*—considering his/her age, talents, training and past record of performance, is there a substantial probability that the patient will (adequate recovery being assumed) render in the future services to his or her society that can be characterized as outstanding, substantial, average, etc.?

Charlesworth (1993) considered the ethical problem of renal transplantation as opposed to dialysis. He noted that there are four different levels of decision-making: the personal doctor–patient level ('is the operation medically feasible and personally acceptable?'); the institutional level ('how should resources be allocated to this operation?'); the national level ('how health care resources relating to renal programs have to compete with wider health and non-health priorities'); finally the international level ('the relative needs of developed and under-developed countries and the obligation of the former to allocate resources to the latter'). Charlesworth noted that decisions made at various levels may not always accord with each other. There are many other important issues such as whether bodily organs are the property of an individual or the assets of the community.

Renal transplantation is interesting from an ethical perspective partly because there are no obvious cases of non-medical conditions (e.g. age, lifestyle) to serve to exclude people. Hence the notorious use in the Seattle Artificial Kidney Centre in the 1970s of criteria such as the patient's emotional maturity and responsibility, their financial resources, and their value to the community at large. Charlesworth (1993) noted that all health programmes favour low risk, low cost cases and that, at the clinical level, different principles are used in the allocation process (urgent need versus highest in the queue).

As a consequence, there is considerable debate and research on ethical implications of organ transplant and dialysis usage (Banks, 1995; Freund, 1971; Haire *et al.*, 1978; Koch, 1996; Lamb, 1990; Le Grand, 1991; Leiwand, 1985; Lewis & Charny, 1989; Parsons & Loch, 1980; Weiss, 1992; Weisz, 1985). There is however a small experimental literature which tries to test different ethical positions (Reeves, 2000).

This study is sixth in a programmatic series that has adopted essentially the same methodology of presenting 16 hypothetical patients to be rank-ordered for use of a kidney

Table 1. *Studies in the series*

Study	Variables
Furnham & Briggs (1993)	Sex, age, nationality, marital status
Furnham (1996)	Sex, smoker, income, voting pattern
Furnham & Ofstein (1997)	Prognosis, dependants, honesty
Furnham *et al.* (1999)	Sex, income, alcoholic consumption, religious beliefs
Furnham *et al.* (2000)	Sex, smoker, employment status, community service

dialysis machine. Each study was a $2 \times 2 \times 2 \times 2$ design varying the characteristics of the hypothetical patients. The studies and the variables considered are listed in Table 1. However, there have been other studies that have been very similar in aim (Murphy-Berman *et al.*, 1998). They have all tried to examine how specific patient characteristics do or do not influence preference decisions. The results from these studies have not always been entirely consistent, but have tended to show many predictable and explicable findings. Thus females are favoured over males; the young over the old; the married over the unmarried; the natives over the foreigners; non-smokers over smokers; the 'poor' over the 'rich'; patients with a good prognosis over patients with a poor prognosis; patients with more rather than with fewer dependants; honest over dishonest patients; non-drinkers over drinkers; Christians over atheists; and finally, those patients with a low versus high responsibility for their illness. Not all factors examined have shown a significant difference. For example, employment status and race showed no significant differences. Further, some studies have been unable to replicate findings. For instance, in three studies there was a significant gender effect (Furnham, 1996; Furnham & Briggs, 1993; Furnham *et al.*, 1999), but not in others (Furnham *et al.*, 2000).

Some of those studies have found interactions between participant and patient characteristics. Thus Furnham and Briggs (1993) showed that the ethical/ideological position that a person favoured related to their allocation preferences. Furnham (1996) showed further evidence of an in-group, self-serving, effect such that smokers favoured smokers and left-wing voting participants favoured left-wing voting patients.

It should be acknowledged that this questionnaire-based approach is not analogous to the way an ethics committee operates for various reasons. Committees have many more details than those supplied here. Further decisions are made in a group setting where people are able to be influenced by and influence others. This means that even with the paucity of information supplied in this study the group-based decision may be different from that of a number of aggregated individuals.

This study aims to replicate and extend the above findings using three new patient variables that have not been previously considered (extraversion, mental health and intelligence) along with the standard variable of sex. Gender was used in this study to serve to replicate previous findings. The other three variables were new. Mental health was chosen because it has been suggested many times that the mentally ill are discriminated against frequently even though their mental illness is unrelated to their physical condition (Weiss, 1992). Intelligence was chosen as a variable because it possibly reflects the ability of an individual to make a contribution to society and hence test the utilitarian hypothesis. The personality variable extraversion was chosen to examine the possibility of a group effect. Previous studies have shown that smoking participants favour smoking patients and left-wing participants favour left-wing patients (Furnham *et al.*, 1999; 2000). This study attempted to determine whether extraverts would favour extraverted patients over introverts and vice versa.

These variables were chosen not to be closely related to medical outcomes. It could be argued that studies have shown that mental health (as opposed to physical health) and personality are both related to longevity and that the mentally ill and introverts may be more likely to have a poorer medical history.

It was predicted that all four variables would have significant effects such that females would be favoured over males, extroverts over introverts, the mentally healthy well over the mentally ill, and the highly intelligent over the moderately intelligent.

This study also considered personality factors that might be associated with these allocation decisions. No hypotheses were formulated for these dimensions however.

Method

Participants

One hundred and thirty adults took part in this study, of whom 80 were females and 50 males. The mean age of the sample was 41.6 years (SD = 12.72). In all, 19 were single, 84 married, 11 divorced and 16 co-habiting. Of the total group, 38 were child-free and the remainder had between them one and six children. In all, 73 had not experienced higher education, with 57 having some past school education. When asked about religion, 77 claimed to be Christian and 48 claimed to have no religious affiliation. Participants were asked to provide ratings on two other scales: religious (0 = not at all to 9 = very) and politics (0 = right-wing to 9 = left-wing). The mean score for religiousness was 3.32 (SD = 2.57) indicating this population was not very religious, while the mean score for politics was 5.05 (SD = 1.81) indicating that the participants had a very slight leaning toward left-wing politics.

Questionnaire

Kidney Machine Dilemma (Furnham & Briggs, 1993). This was exactly the same questionnaire used in previous studies (Furnham, 1996; Furnham & Briggs, 1993; Furnham & Ofstein, 1997; Furnham *et al.*, 1999; 2000). The instructions read:

> *Located at South Midland Hospital is a kidney machine. A marvel of technological ingenuity, it is the only hope of life for people with a rare kidney disease. The machine functions as a kidney for people who have lost the use of their own. By connecting themselves to the machine for 24 hours each week, people with renal failure can remain alive indefinitely—or until they are killed by some other ailment unconnected with their kidneys.*
>
> *There are several problems associated with using this machine, for there are many more people who need it than there is time available on the machine. In fact, only about five people can be placed on it at any one time. Doctors examine all potential patients and have to determine those who could profit most from connection to the machine. They screen out those with other diseases, for whom the machine would be only a temporary expedient, and they turn their list of recommended patients over to the hospital administration. At present, the doctors have submitted the names of several persons for one vacant place on the machine.*
>
> You are asked to act as if you were to make that decision. Remember, there is only one vacancy and now you must fill it with one of the 16 people. All are British citizens. Having made your choice for the first place, you must rank the other patients in order of priority for use of the machine, should the health of your original choice deteriorate rapidly, as can be the case with this disease.

Please put a number in the boxes available. Start off with your first choice by putting 1 in the appropriate box, then 2 for your second choice, etc. We appreciate that this is a difficult task, but please have a go.

The characteristics of the patients varied along the four previously mentioned variables, i.e. extrovert versus introvert, male versus female, highly versus moderately intelligent, mentally ill versus mentally healthy.

Procedure

Participants were recruited by a market research company who were asked to test 200 British adults. Volunteers were given the questionnaire in an anonymous envelope and paid a small sum for the participation. In all, 189 were collected but only 130 of the questionnaires were usable.

Results

A four-way repeated measures ANOVA was performed with the four dichotomous patient variables (gender, extraversion, intelligence and mental illness) as the independent variables. All patient variables were significant with the exception of gender. The effect size was calculated: this is a measure of difference and it has been suggested by Cohen (1977) that a score of 0.8 or above is large; 0.5 is medium and 0.2 is small. Thus, extraverts ($M = 7.99$, $SD = 0.11$) were preferred over introverts ($M = 9.00$, $SD = 0.11$; $F_{(1,\ 129)} = 23.92$, $p < 0.01$, $\eta^2 = 0.16$), the highly intelligent ($M = 7.58$, $SD = 0.18$) over the moderately intelligent ($M = 9.42$, $SD = 0.18$; $F_{(1,129)} = 52.64$, $p < 0.01$, $\eta^2 = 0.29$), and the mentally healthy ($M = 6.00$, $SD = 0.18$) over the mentally ill ($M = 11.00$, $SD = 0.18$; $F_{(1,129)} = 200.37$, $p < 0.01$; $\eta^2 = 0.61$). There were two two-way and one three-way interactions. Thus, there was an interaction between gender and introversion ($F_{(1,129)} = 35.55$, $p < 0.01$, $\eta^2 = 0.22$) showing that female extraverts ($M = 7.58$, $SD = 0.14$) were preferred over female introverts ($M = 9.28$, $SD = 0.13$; $F_{(1,129)} = 57.34$, $p < 0.01$), while there was no corresponding difference with males. There was also an interaction between introversion and intelligence ($F_{(1,129)} = 13.92$, $p < 0.01$, $\eta^2 = 0.10$), which indicated that although highly intelligent patients were more likely to be given priority than moderately intelligent ones, the effect was much more pronounced for introverts ($F_{(1,129)} = 65.45$, $p < 0.01$, $\eta^2 = 0.34$) than for extraverts ($F_{(1,129)} = 23.48$, $p < 0.01$, $\eta^2 = 0.15$). The three-way interaction was between gender, introversion and intelligence ($F_{(1,129)} = 17.67$, $p < 0.01$, $\eta^2 = 0.12$) and indicated that although the highly intelligent were consistently given priority over the moderately intelligent, the effect was intensified for female introverts and attenuated for female extraverts. Thus, the latter two interactions (introversion-intelligence and gender-introversion-intelligence) were consistent with the strong overall main effect of intelligence. There was also a four-way interaction between gender, introversion, intelligence and illness.

Following this analysis, eight participant variables were examined in turn to see whether they systematically affected the ratings. Participants were divided at the mean into high and low groups on all five personality traits and ANOVAs calculated. None of the five factors reached significance. Thereafter three individual factors—political affiliation (left versus right); has/has no children; religiousness—were examined. Once again there were no significant main effects or interaction effects. It should be pointed out that the above analysis was problematic as it was necessary to treat the non-parametric ratings as ratio data.

Table 2. *Means, SDs and ranks for the ratings of the 16 vignettes*

Description	Mean	SD	Rank
1. Toby, an introvert, who is very intelligent, and has no history of mental problems.	5.26	3.48	3
2. Alison, of average intelligence, with a history of mental illness, and is an extravert.	10.43	3.93	12
3. Lorna, who has a history of mental illness, is an introvert with high intelligence.	5.56	2.93	4
4. David is an extravert, of limited intelligence and has a history of mental problems.	12.06	3.78	15
5. Simon, has strictly average intelligence, is an introvert and has no history of mental illness.	7.65	3.43	7
6. Barry, of average intelligence, with a history of mental problems, who is an introvert.	11.44	3.56	14
7. Pauline, a very intelligent introvert, but with a history of mental illness.	9.96	3.51	10
8. Joan, has a history of mental problems, is an extravert, and is highly intelligent.	9.91	2.98	9
9. Gillian, has average intelligence, is an introvert with no history of mental illness.	8.04	3.87	8
10. Steven, an extrovert, highly intelligent, and has a history of mental problems.	10.04	3.39	11
11. Susan, a very intelligent extravert, with no history of mental illness.	4.26	4.14	1
12. Billi, with no history of mental problems, an extravert and highly intelligent.	5.01	4.52	2
13. Joanne, an extravert, with average intelligence and no history of mental illness.	5.68	3.74	5
14. Ken, who has no history of mental illness, an extravert with average intelligence.	6.52	3.71	6
15. Peter, an introvert, has a history of mental problems and is very intelligent.	10.58	3.48	13
16. Kate, has a history of mental illness, is introverted and with limited intelligence.	13.52	4.24	16

Table 3. *Means rank for each patient variable, main effects and effect sizes*

Variables	Mean rank	*F*	Effect size[b]
Gender			
Male	8.42	1.18	0.01
Female	8.58		
Personality			
Introvert	9.01	23.92*	0.16
Extravert	7.99		
Mental Illness			
Yes	10.99	200.11*	0.61
No	6.00		
Intelligence			
Average	9.42	52.63*	0.29
High	7.58		

*$p < 0.01$. *Note*: [a] The lower the score, the higher the priority assigned by participant; [b] Eta square.

Discussion

This study showed that three of the four within-patient variables had a significant effect on participants' preferred allocation decisions. In contrast to some previous studies (Furnham, 1996; Furnham & Briggs, 1993; Furnham *et al.*, 1999) but not others (Furnham *et al.*, 2000), there were significant sex differences. However, there were three other significant main effects on the variables not previously considered in this research programme.

The variable that showed greatest differentiation was 'history of mental illness', with a reasonably large effect size ($h^2 = 61$). Patients with no history of mental illness were clearly favoured over those with such a history. Though the type of illness was not specified, the description did imply that it was chronic rather than acute. Certainly it would be most interesting to specify different types of illness (e.g. psychotic, neurotic, etc.) to see if this influences decision making. Previous work in medical ethics has quite understandably focused on physical rather than mental illness, as it has been assumed that physical health

predicts both the relative likelihood of operation success as well as expectancy of future life. It is possible that participants appeared to discriminate against the mentally ill because they believed they are less capable of making significant contributions to society. It may also be that mental illness was associated with a reduced likelihood of functional longevity.

The second factor that differentiated between patients was intelligence. Participants favoured those described as highly intelligent possibly because it was believed that they could make more substantial contributions to society. Indeed individuals seem to believe that intelligent people can contribute to the development and wellbeing of society (Sternberg, 2000). Two things should be noted here. First, the distinction here was between people of high versus average, not high versus low, intelligence, which presumably would have shown even greater differences. Second, the concept of intelligence was not defined or any distinctions made. It is quite possible that had different types of intelligence been distinguished and understood (i.e. crystalized versus fluid; emotional versus intellectual) it may have lead to subtly different results.

There was a small, but significant, difference in terms of the preference for extraverts over introverts. Extraverts tend to be more optimistic and self-confident, easier to get on with and more friendly (Eysenck & Eysenck, 1985). The strategic effects of the foregoing positive attributes seem to place extraverted patients in an advantageous position relative to their introverted counterparts in decisions concerning the allocation of scarce medical resources.

This study looked at four patient factors which may or may not relate to medical outcome. However it seems the case that lay and medical decision makers are acutely aware of those factors which have most impact such as physical factors, life style, medical and family history. Yet these seemingly superficial factors lead participants to make clear choices, perhaps because of their lack of knowledge of the condition but also because they have no other information to work on in this study. One implication for this research is that strictly medically irrelevant information should not be included about patients lest it serve as a basis for decision makers.

Previous studies have shown that a few participant characteristics interacted with patient characteristics in the allocation decisions. Thus Furnham (1996) found left-wing participants favoured left-wing patients and vice versa. Similarly Furnham *et al.* (1999) showed smokers and non-smokers showed in-groups favouritism by supporting patients like themselves. However most of the studies in this area have shown that few participant variables were systematically and statistically significantly related to patient variables. Thus Furnham *et al.* (2000) found only one of the six variables that they had investigated had any effect on the allocation decision. In this study none of the nine independent variables (the big five personality traits, political affiliation, religiousness and children) had a significant effect. Further, there was no in-group favouritism interaction with extraversion. This appears to indicate that the individual difference variables examined in this area have only a minor impact on decisions concerning medical allocation.

Studies such as this one provide some insight concerning the processes underpinning medical decisions by 'lay committees'. From an academic point of view it is possible to try to determine what implicit ethical ideology lay people are employing, e.g. teleological or deontological. From an applied point of view it may be important that committee members' knowledge about certain issues (i.e. mental health) is explored and tested. This may be used to act as a criterion for being elected to or excluded from being on a committee.

As noted before, it is important to point out that the methodology used here may have poor ecological validity when examining what 'real' medical ethics committees do (Dickson, 2000; Kluge, 1996; Reither-Theil, 2000; Szeremata *et al.*, 2001). This study used short, hypothetical, abstract vignettes which are typically used in psychological and philosophical empirical research to study ethical ideology (Reeves, 2000). It is not certain whether

individual or groups (i.e. ethics committees) would ever have only this type of information or indeed make the same decisions. Experimental research often requires simplification which undermines generalizability.

Further, the people in this study are not medically trained. Often individuals on committees that make all important allocation decisions are a mix of the medically trained and lay people. It is quite possible that medical knowledge has a powerful impact on these decisions. Thus to get a better idea of how real ethics committees work one would need greatly enriched vignettes, for participants to be in part medically trained and for their decisions to be made in a group discussion setting.

References

BANKS, G.J. (1995). Legal and ethical safeguards: protection of society's most vulnerable participants in a commercialized organ transplantation system. *American Journal of Law and Medicine, XXI*(1), 92.

BENTHAM, J. (1789). *An introduction to the principles of morals and legislation.* New York: Hafner Publishing and Co.

BRODY, H. (1981). *Ethical decisions in medicine.* Boston: Little, Brown & Co.

CHARLESWORTH, M. (1993). *Bioethics in a Liberal Society.* Cambridge: Oxford University Press.

COHEN, J. (1977). *Statistical power analysis for the behavioural sciences.* New York: Academic Press.

DICKENSON, D. (2000). Are medical ethicists out of touch? Practitioner attitudes in the US and UK towards decisions at the end of life. *Journal of Medical Ethics, 26,* 254–260.

EYSENCK, H. & EYSENCK, M. (1985). *Personality and individual differences.* New York: Plenum Press.

FREUND, A. (1971). Organ transplant: ethical and legal problems. In: S. GORTOWITZ, R. MACKLIN, A., JANTON, J. O'CONNOR & S. SHERWIN (Eds.): *Moral problem in medicine.* Englewood Cliffs, NJ: Prentice Hall.

FURNHAM. A. (1996). Factors relating to the allocation of medical resources. *Journal of Social Behavior and Personality, 11,* 615–624.

FURNHAM, A. & BRIGGS, J. (1993). Ethical ideology and the allocation of scarce medical resources. *Journal of Social Behavior and Personality, 8,* 87–98.

FURNHAM, A. & OFSTEIN, A. (1997). Ethical ideology and the allocation of scarce medical resources, *British Journal of Medical Psychology, 70,* 51–63.

FURNHAM, A., MEADER, A. & MCCLELLAND, A. (1999). Factors affecting the allocation of scarce medical resources. *Journal of Social Behavior and Personality, 13,* 35–746.

FURNHAM, A., SIMMONDS, K. & MCCLELLAND, A. (2000). Decisions concerning the allocation of scarce medical resources. *Journal of Social Behavior and Personality, 15,* 185–200.

HAIRE, H., SHERRARD, D., SCARDOPACE, D., CURTIS, F. & BRUNZELL, J. (1978). Smoking, hypertension and morality in a maintenance dialysis population. *Cardiovascular Medicine, 3,* 1163–1168.

KLUGE, E.-H. (1996). The roles and functions of hospital-based ethics committees. *Canadian Medical Association Journal, 154,* 1094–1095.

KOCH, T. (1996). Normative and prescriptive criteria: the efficacy of organ transplantation allocation protocols. *Theoretical Medicine, 17,* 75–93.

LAMB, D. (1990). *Organ transplants and ethics.* New York: Routledge.

LE GRAND, J. (1991). *Equity and choice: an essay in economics and applied philosophy.* London: Harper Collins Academic.

LEIWAND, G. (1985). *Transplants: today's medical miracles.* New York: Franklin Watts.

LEWIS, P.A. & CHARNY, M. (1989). Which of two individuals do you treat when only their ages are different and you can't treat both? *Journal of Medical Ethics, 15,* 28–32.

MURPHY-BERMAN, V.A., BERMAN, J.J. & CAMPBELL, E. (1998). Factors affecting health care allocation decisions: a case of aversive racism? *Journal of Applied Social Psychology, 28,* 2239–2253.

PARSONS, V. & LOCK, P. (1980). Focus: current issues in medical ethics, *Journal of Medical Ethics, 6,* 173–176.

REEVES, R. (2000). Fair treatment: public conceptions of distributive justice in health care. Unpublished D.Phil. Oxford University.

REITHER-THEIL, S. (2000). Ethics consultation on demand: concepts, practical experiences and a case study. *Journal of Medical Ethics, 26,* 198–203.

RESCHER, N. (1969). The allocation of exotic medical life-saving therapy. *Ethics, 79,* 173–186,

STERNBERG, R. (2000). Intelligence and wisdom. In: R. STERNBERG (Ed.), *Handbook of intelligence* (pp. 631–649). Cambridge: Cambridge University Press.

SZEREMETA, M., MANNING, D., WATSON, A., WRIGHT, M., NOTCUTT, W. & LANCASTER, R. (2001). Snapshots of five clinical ethics committees in the UK. *Journal of Medical Ethics, 27,* 19–29.

WEISS, A. (1992). *Bioethics: dilemmas in modern medicine.* New Jersey: Enslow.

WEISZ, V. (1985). Psychological issues in sibling bone marrow donation. *Ethics and Behavior, 2,* 185–201.