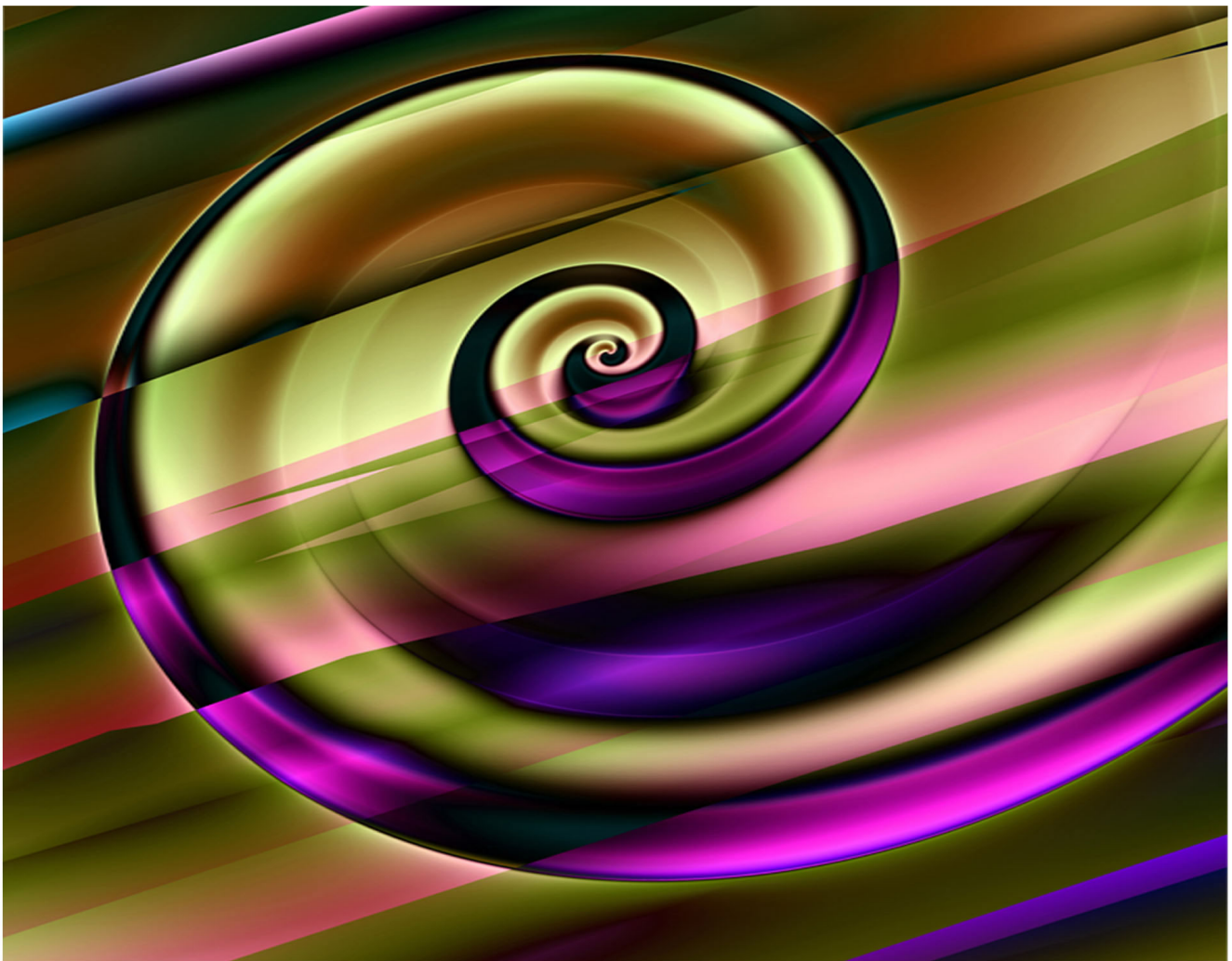


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**THE DILEMMA OF MANAGING SCARCE HEALTH CARE RESOURCES: EVIDENCE OF THE
CONFLICT BETWEEN ECONOMIC OR ETHICAL PRINCIPLES IN MICROALLOCATION
DECISIONS**

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ABSTRACT

Health economists proposed maximizing additional health gains as a criterion to set priorities and to maximize social welfare in the microallocation of healthcare resources. This requires that social values from health improvements are neutral in relation to personal characteristics of people, which seems to be often contradicted by empirical evidence. This paper addresses the social and ethical values that can potentially conflict with economic ones in decisions taken at the micro level of healthcare rationing. Using quantitative and qualitative data collected from a random sample of 200 college students we explore their (i) orientations and motivations when faced with hypothetical scenarios involving prioritization of patients that are distinguished only by their personal characteristics and (ii) views concerning its involvement in decision making over which patients to treat. Findings suggest: (i) the coexistence of fairness and economic orientations among respondents even though utilitarianism received the greatest support; (ii) that although respondents wish to be consulted in matters of microallocation decisions, they do not want to assume the role of deciding between patients.

Keywords: Microallocation; Efficiency; Ethical judgments

1. Introduction

National health systems have been under an increasing pressure to reduce costs. In the context of scarce resources deciding how best to allocate them is of the utmost importance. The case of healthcare is particularly sensitive. On the one hand citizens may have the right to receive healthcare but on the other, the funding to ensure provision invariably lags behind demand. Hard choices need to be made in order to establish priorities in healthcare. How these choices should be made is the major concern of academics and health professionals and it is a matter largely debated in health economic and bioethics literature. If until now rationing healthcare has been a discretionary practice by health professionals, the increasing coverage of the media and the pressures on state budgets urge the adaptation of explicit measures with a higher participation of the stakeholders directly affected by the decisions.

Health economics have contributed to this discussion by proposing a balance between health benefits (gains) and costs. Accordingly when it comes to cost-utility analysis the priorities should

obey efficiency resting on treatments or patients that generate the most benefits per unit of costs. Utilitarianism is the allocation principle to be followed by decision makers. However useful this approach may be, a mere economic calculus has been found to be deficient in failing to take into account the public's opinion which, unlike economists, tends to attribute less importance to cost and to maximizing health gains or effectiveness. Empirical evidence suggests that people when asked to establish priorities, especially between patients, value other social considerations over efficiency such as some of people's characteristics, gravity of health conditions or the ultimate distribution of health in society (Dolan et al., 2005 for a review).

Dealing with social considerations is, nowadays, the greatest challenge placed upon those responsible for developing rationing policies in the healthcare sector, mainly at a micro level. One of the difficulties lies in defining equity in health. In this context there has been a proliferation of articles in the literature of health economics in recent years with proposals for alternative equitable principles to use as a basis to reflect the distributional considerations in priority setting (Williams and Cookson, 2000 for a review). The theoretical discussion shows that it seems unlikely that a general and universal theory of what equity in healthcare is meant to be will ever be developed. This coupled with the fact that it is expected that preferences for distributive principles vary at an individual and cultural level, justifies the intervention of society in the debate about the planning of scarce healthcare resources. Indeed much of the available evidence reveals the existence of cultural variations when it comes to establishing priorities between individual patients, mainly in the importance attributed to some personal characteristics. Age, for example, is a highly disputed criterion for prioritization medical services. If most societies ponder the age factor when selecting whom to treat, there seem to be exceptions, as shown by research undertaken in Germany (Diederich et al., 2001), Australia (Nord et al., 1995) or England (Anand and Wailoo, 2000) where direct discrimination in favour of age was not widely supported. In these researches individuals were more concerned with guarantying equal opportunity of healthcare treatments. Even in studies where social value is not independent of age, there seems not to be a consensus regarding the weight given to each stage of life. If most respondents attach more importance to a year of life lived by a young or middle age person compared to a child or an elderly person (World Bank, 1993) research conducted in Brazil revealed that individuals prioritize the extremes, namely the very young and the older (Fortes and Zoboli, 2002). These cultural variations suggest that decisions concerning the establishment of priorities between patients involve value judgments embodied in ethical principles of distributive justice rooted in the beliefs of each nation. In order to explicitly address the criteria to prioritize healthcare resources at a bedside level it is necessary to know the ethical standards upheld by each society and their motivation. A further difficulty in defining distributive principles, that can justify these cultural variations, may arise from the fact that it often incorporates simultaneous efficiency and fairness considerations. Separating the equity motivations from the efficiency ones seems essential to insure clarity of the debate around the definition of social values.

Rationing in Portugal is not explicitly addressed in the political agenda. As is happening in other developed countries, the shortage of resources in the Portuguese National Healthcare Service has become increasingly stronger in recent years, especially with the increase in health costs. The reforms that have been carried out since the mid 1990's, with the main purpose of improving efficiency and controlling the increases in healthcare costs, adopted a typology of rationing which is a mixture of explicit measures taken at the macro level and implicit practices remaining at the responsibility of the healthcare providers. In this sense, the rationing practiced in Portugal

has not involved the population in any way, not even at the basic level of public debate. To our knowledge there is to date no published work in the Portuguese context concerning the micro allocation of scarce resources in health. This study is pertinent and relevant mainly because Portugal is undergoing deep economic reforms that challenge many social rights. Thus the objective of this article is to identify and analyze distributive principles of the Portuguese in hypothetical situations of prioritization among patients and explore their willingness in taking such decisions. The findings will also be discussed in the light of the current Portuguese socio-economic situation and comparisons will be made with Brazilian studies.

2. Distribution principles and qualitative analysis

The distribution principles most largely cited in theoretical literature when choosing between patients are: (i) Distribution according to need (Mooney, 1994); (ii) Distribution in order to reduce inequality in health (Rawls, 1971; LeGrand, 1991; Williams, 1997); (iii) Distribution in accordance with merit/deserve (Mooney, 1987; Olsen et al., 2003) and (iv) Lottery principle (Childress, 1970).

These criteria should be analyzed with caution not only because they are potentiality conflicting with each other but their own definition is in some cases not very clear, insofar efficiency and equity consideration may coexist simultaneously. Despite giving priority to patients in accordance to need probably being morally the most widely accepted criteria, its handling in practical use can give raise to ethically different interpretation depending on its definition in technical or social terms. Technically, need can be understood as the capacity to benefit (Culyer and Wagstaff, 1993) following the efficiency criteria or can instead be seen as clinical urgency revealing equity concerns translated in severity or the “rule of rescue” principle (Hadorn, 1991). Socially speaking need can be understood in emotional terms when the relevant factor is the relation between the patient and others (not necessarily economically) (Fortes et al., 2001). Reduction of inequalities in health is often connoted with equality. However there is no consensus in literature about what is meant by equality in health. Following the general theory of justice defended by Rawls in the 70’s, actions are ethically acceptable as long as the benefits derived from them are fairly distributed, particularly among the weaker members of society (Rawls, 1971). Translated to health, priorities should go to those with the worst health state. LeGrand (1991) defends the theory of equality of substantive opportunities where equity actions should be those that reduce inequalities in health resulting from factors lying beyond people’s own control. In accordance with capability approach developed by Amartya Sen (2002) that distinguishes between capability (ability to achieve a given functionality) and functionality (all that the individual values in terms of being or doing), if equal opportunities are ensured then any discrepancy in terms of health is acceptable because it results from the freedom of choice of each, particularly in terms of lifestyles. This equity interpretation can also be understood as the allocation in accordance with merit or deserve. Reduction of inequality in health may also be sustained by the age factor. The preferences for younger ages at the expense of elders can occur as a way to guarantee intergenerational equity (age-egalitarianism) translated in the fair-inning principle (Williams, 1997). Choosing patients according to personal merit is a criteria commonly invoked by society for whom it comprises an intuitive notion of justice. Finally when explicit rationing is seen as unethical or when choice is no longer morally tolerable then chance may be as fair a way as any for discriminating between contenders for a limited availability of care.

3. Methods

This study uses a combination of quantitative and qualitative data to examine ethical principles of distributive justice. A self-administered questionnaire was developed with two groups of questions. The first group comprises eleven hypothetical scenarios based on a similar research (Nord et al., 1995; Fortes and Zoboli, 2002). This posited two individuals, both in life-threatening condition allocated to a hospital emergency department where, owing to lack of resources, only one can be treated. Patients are equal in all respects except in the following factors: age, gender, having children or not, marital status, level of income, lifestyle (smoking and drinking), employed or unemployed, race and ex or non offender. Respondents should decide whom to treat and justify the reasons for their choice. Even if they refuse to make a choice or want to give equal priority to both individuals, this option was not expressed because we want to force them to make a decision. In the second group of the questionnaire respondents should answer to questions concerning the difficulty in taking microallocation decisions and the role of society as a whole in this matters. We use a convenient sample of 200 college students from two universities located in northern Portugal during the year of 2012. Descriptive statistics of the sample reveal that the age of respondents range from 18 to 50 (mean = 24.78, sd = 6.96). Women were more representative (57 percent) in the sample, the majority (86 percent) was single and half of students inhabit urban areas. Concerning the level of training 76.4 percent of students are undergraduate and 23.6 percent postgraduate: 35 percent study economics, 22.5 percent management, 21 percent psychology, 11.5 percent law and 10 percent medicine. For 61.1 percent of the sample, family income ranged between €851 and €2500. A majority of respondents (89.5 percent) felt they had good or very good health.

Despite the technical limitation in using a convenient sample, it has the advantage of obtaining the opinion of young people who may eventually in the future be charged with the responsibility of making such decisions. Student participation was voluntary. Students were all brought together to fill the questionnaire without communicating with each other. They were given as much time as they wished to analyze the options and write down their arguments. The purpose was to give them the opportunity to reflect and form a reflexive opinion as defended by Dolan et al. (1999) In order to encourage respondents to answer the questionnaire in a serious manner the author of this paper reminded them regularly that in the future they may well face this reality if they occupy leading positions in healthcare institutions.

Quantitative analysis was carried out with SPSS (version 19). Bivariate analysis and logistic regressions were used to determine the influence of personal characteristics on preferences between choices. The results were submitted to treatment and statistical analysis of association regarding the personal variables of the respondents, being considered as significant differences less than or equal to 5 percent. Qualitative analysis consisted of submitting the reasons expressed by each respondent for an evaluation of contents and interpretation of collected material followed the teachings of Bardin (2013). Justifications for the choices made were analyzed from the current principles described below.

4. Results

Table 1 shows the results of both groups of questions in the questionnaire and summarizes the formulation of each question. The quantitative results are separated by sex of respondents

because even if in general no statistically significant differences were found for the demographic characteristics of students some interesting gender differences were establish for those that within the scenarios did not or could not decide. Even if this option had not been given, students proved unable to choose in some scenarios and wrote that in the part intended for justification. In the following we provide details regarding quantitative data and comments about the reasons advanced for each choice and by each factor.

Table 1. Percentage response for each issue by sex of respondents

I. Group: Scenarios Deciding who to choose between a ...	Results (by Sex of respondents)		
	Options	Woman (%)	Man (%)
1. <i>8 year-old child & 65 year-old person</i>	Child	88.6	95.3
	Old Person	7.0	3.5
	Not Choose	4.4	1.2
2. <i>10 year-old child & 40 year-old adult</i>	Child	78.9	83.7
	Adult	14.0	10.5
	Not Choose	7.0	5.8
3. <i>Man & Woman both 35 year-old</i>	Woman	60.5	72.1
	Man	7.0	9.3
	Not Choose	32.5	18.6
4. <i>Married & Single Woman</i>	Married	64.0	77.9
	Single	9.6	10.5

	Not Choose	26.3	11.6
5. <i>Woman with & without children</i>	With Children	91.2	96.5
	Without Children	1.8	3.5
	Not Choose	7.0	0
6. <i>Smokers & Non-Smokers</i>	Smokers	18.4	23.3
	Non-Smokers	75.4	72.1
	Not Choose	6.1	4.7
7. <i>Alcoholic & Non-Alcoholic</i>	Alcoholic	15.8	19.8
	Non-Alcoholic	77.2	74.4
	Not Choose	7.0	5.8
8. <i>Employed & Unemployed</i>	Employed	43.9	59.3
	Unemployed	20.2	20.9
	Not Choose	36.0	19.8
9. <i>White person & Black person</i>	White	21.8	39.5
	Black	8.8	7.0
	Not Choose	61.4	53.5
10. <i>High & Low Income</i>	High Income	17.5	20.9
	Low Income	48.2	50.0
	Not Choose	34.2	29.1
11. <i>Ex-Offender & Non Offender</i>	Ex-Offender	12.3	3.5
	Non-Offender	53.5	75.6
	Not Choose	34.2	20.9
II. Group: Difficulty, Transparency and Willingness to Make Choices			
Difficulty of Choice	Very Difficult	61.4	39.5
	Slightly Difficult	31.6	51.2
	Difficult	7.0	9.3
	Not Difficult		
Consideration of public opinion on these matters?	Yes	86.7	80.2
	No	13.3	19.8
Willingness to make these decisions?	Yes	26.3	47.7
	No	73.7	52.3

4.1. I Group of Questionnaire:

1. Age Factor (Question 1 & 2)

The child was prioritized by 91.5 percent and 81 percent if competing with an elderly individual or a middle-aged, respectively. In the qualitative analyses we find empirical support for both efficiency and equity concerns. In terms of efficiency, the dominant is preferences for productivity ageism when respondents chose younger over older because ‘the child will contribute to our country’, ‘a child has more to give to the country’, ‘a child is in economic terms more profitable’. The same patterns of reasoning were used to justify the priority given to the middle aged individual instead of the child. Preferences were also revealed for utilitarianism ageism or need as capacity to benefit when respondents answer “younger have a better capacity for recovering’ or ‘younger will benefits longer from treatments’. Concern with equality translated in the fair-inning principle where respondents justify their preference for younger arguing that

they ‘had a future to look forward’ or ‘have not lived enough compared to older people’. Also evidenced was the Rawls theory for those who prefer the younger because ‘a child is younger and defenseless’ or the elderly because of ‘their vulnerability’.

2. Gender factor (Question 3)

The majority (65.5 percent) of respondents give priority to women. More than a quarter of respondents choose neither. The percentage of women who did not choose or that give equal priority almost doubles that of men. Unexpectedly a minor percentage of women give more priority to women than men do. Qualitative analyses denoted that priority given to women over men centered primary in efficiency grounds reflected on promoting the wellbeing of the majority: ‘the women can have children and so are more needed’ and ‘women contribute more to society than men’. Equity concerns reflecting the *maximin* principle were also found with the argument that ‘women have a more fragile body’ or ‘are more sensitive’.

3. Marital Factor (Question 4)

Respondents prefer mostly married woman (70 percent). The reason rest on utilitarianism grounds based on her social responsibility: ‘she may have children’s who need a mother’. A motivation of efficiency was also evident with preference for the single women: ‘she can have a better job in the future’. A fifth does not consider this factor relevant claiming: ‘the single woman should not be discriminated just because she has not yet had the opportunity to marry’. More than twice as many women than men do not choose any or attach an equal priority ($\chi^2 = 6.668$; $p = 0.036$).

4. Family Dependency Factor (Question 5)

The majority of respondents (93.5 percent) give priority to women with children for efficiency reasons arguing that ‘children need the mother to take care of them’ or ‘she need to recover faster to look after her children’ or ‘if she dies children will suffer a lot with the loss’. Men tend to value the dependence factor less than women while at the same time are those who reveal less doubt in making the choice ($\chi^2 = 6.7771$; $p = 0.034$)

5. Life-Style and Offender Factor (Question 6; 7 & 11)

The majority of respondents choose the non smokers (74 percent), non drinkers (76 percent) and non offender (65 percent). Contrary to others studies (Nord et al., 1995; Fortes and Zoboli, 2002) our respondents disapprove strongly and equally of smokers and drinkers. Among the three scenarios, the choice concerning criminal behavior seems to be the more difficult to take within almost 30 percent of non responses arguing: ‘atonement had been made for bad actions through the legal systems and so both are equally entitled to health resources’. In this scenario men reveal to be more punitive ($\chi^2 = 11.283$; $p = 0.004$). The pattern of choice in all the scenarios was justified by desert or merit principles. Most of the reasons express exogenous causes to ill-health as a reason to punish: ‘smokers or drinkers are responsible for their actions and it should not be society to pay for that’, ‘nowadays everybody knows that smoking or drinking is bad for the health’. Efficiency reasons were also claimed based on the concept of need as capacity to benefit: ‘non smokers or non alcoholic should be treated first because they will have a better capacity for recover’ and ‘they will have a better life and a longer life expectancy’. Nevertheless about a fifth of respondents reveal equity concerns based on the *maximin* principle or medical need expressed as “the rule of rescue principle” when they give priority to smokers and drinkers (the pattern was

the same) because ‘they are more fragile and if not treated they can die’ and ‘smokers and alcoholics should get priority because they are in a worse health condition’

6. Economic Status Factor (Question 8 & 10)

The majority of respondents (51 percent) give priority to employed patients for efficiency reason: ‘the employed person is striving to get something in life and the unemployed is not doing anything’. Men tend to prioritize more employees than women do, while revealing more doubts in the choice ($\chi^2 = 6.763$; $p = 0.034$).

In relation to income level most respondents (58 percent) do not choose while 19 percent give priority to the richest patients. The majority of respondents think the selection should follow the order of arrival. Those who choose the richer person claimed efficiency reasons: ‘the individual with a higher income helps society’. Evidence of equity considerations were found when priority was given to the unemployed or to the poorer in the sense that ‘a person with a high income can be treated in the private sector’

7. Ethnic Factor (Question 9)

Selecting patients in accordance with race (alongside with income level) proved to be the most difficult choices to make. When the only difference between patients is the color of their skin, most (58 percent) did not choose any option. Even so, those who prefer the white person (34 percent of respondents) denoted ethics of identity while alluding a denial of being racist: ‘I chose the white person not because I’m a racist, but just because a white person is more related to my country’, ‘if I have to choose I choose my race (but I’m not a racist)’. The lottery principle dominates this selection with respondents claiming that they should be attended in order of arrival.

4.2. II Group of Questionnaire:

It is not surprising to find that making choices of this kind is considered almost unanimously (92 percent) difficult or very difficult converging through other international studies [4]. Women declare more difficulty than men ($\chi^2 = 10.616$; $p = 0.014$) which confirms the previous findings. Although the majority of respondents (83.9 percent) consider that population should be involved in such decisions most don’t view them (64.5 percent) in the role of having to take them one day. Respondents argue that they do not want to bear this responsibility suggesting they want to avoid some disutility (Coast, 2000). Women show, unsurprisingly, less willingness to assume such responsibility than men (Fisher Test; $p = 0.003$). Most respondents appointed doctors or multidisciplinary teams as the best actors for establishing these priorities.

5. Discussion

How to allocate the ever scarcer resources of healthcare is a matter of concern between decision makers. Even if health economics has advocated the adoption of utilitarianism criterion it is important to know if the population shares this criterion under all circumstances. Empirical evidence reveal that in health matters many social and ethical values conflict with economic ones. The present study is an exploratory research, designed to strengthen the commitment of Portuguese population to the maximization rule of health gains and to scrutinize which ethical values Portuguese revisit themselves when priorities must be set between patients. Our main conclusion is that even though there is some concern about fairness, efficiency considerations were given the greatest support among the respondents. This seems consistent with international

evidences (Nord et al., 1995) which reveal that values among young and highly educated people differ from values of older people or the less educated with the former being more preoccupied with efficiency while the latter tend to be more concerned about fairness/equity. The results suggest that young people are aware of the unfavorable economic environment of the country. This was clearly noticeable by the frequency with which economic terms have been used by respondents reporting that somehow to help the country and/or society, namely: 'taking into account the state of the country...' or '...contributes to the country'. This increase in consciousness of the country's economic difficulties can be explained by the fact that these young people grew up under a certain concept of economic stagnation or recession. On the other hand this awareness might lead to a better acceptance by this and future generations of rationing policies in the healthcare sector that will result in fewer rights.

The qualitative analysis allows us to conclude that respondents consider the consequences of each choice in terms of the benefit earned by the majority in a clear allusion to the utilitarian principle. This is evidenced in almost all scenarios except in the income and delinquency aspect. In the age factor the preferences for younger over elderly were primordially by utilitarianism and productive ageism. The large discrepancy between the choice of the child and the elderly can eventually be explained by ethics of identity and seem to converge to the cult of youthfulness evident in modern societies but not consistent with the increasing size of elderly population in Portugal, considered the EU country with a faster aging population. Furthermore, the general preference given to women instead of men mainly due to their ability to perpetuate the specie may reveal some preoccupation with the aging of society. A concern with efficiency was also visible with the priority given to married women and those with dependence, because of the family responsibility; with the priority given to non-smokers and non alcoholic due to their higher capacity of recovery and with priority attributed to employed individuals over unemployed due to their aptitude to generate wealth instead of being a receiver of social security contributions. Equity considerations were notable with arguments defending the fair-inning principle, protection of the weaker or the more vulnerable in society present under the age factor, the income factor or, even, in the punishment over those who lead unhealthy life styles.

The majority of respondents reveal reluctance to accept the idea of having to establish priorities at the micro level in a potentially real context. Instead they seem to delegate this role to physicians and multidisciplinary groups though, believers that the opinion of the population should be considered.

In spite of methodological differences, there appears to be some cultural similarities with the Brazilian research. According to two studies taken in Brazil by Fortes (Fortes and Zoboli, 2002; Fortes and Pereira, 2012) at different times and with different samples, it is possible to see that both cultures seem to reflect a preoccupation with women, the family dependency and the marital status. In both studies more respondents (79.5% and 83.8%, in the study of 2002 and 2012 respectively) give more priority to women compared to ours (65.5%). The esteem revealed by respondents about family dependency was very similar in the three studies with about 90% giving priority to women with dependent children (or more children). The same occurs in relation to the marital factor with around 70% of all respondents (three studies) giving preferences to the married factor. Even so, in the Brazilian research, the single women seem to be more valued than in our, where it was selected by only 10% of respondents against approximately 22%, respectively. In what concerns age factor it is interesting to note that respondents in Brazilian studies seem to privilege the elder more than we do. Even so this tendency was more pronounced in 2002 than nowadays which can be explained by productivity

reasons related to the economic development of the country. In fact, in 2002 the elderly were selected by 23% of respondents when competing with a child (against 15% in 2012). When the decision was between an elderly and a 25 year old man, the pattern of response changed from a preference for the elderly (61% in 2002) to the younger man (79%).

In conclusion, it is important to emphasize that this research is an explanatory study carried out through a convenience sample which prevents the findings from being generalized to Portuguese society as a whole. The results reveal that establishing priorities in health is an extremely difficult task, but if they have to be taken, young people seem to appreciate decisions that balance the impact on the welfare of the majority.

In order to counteract this limitation of the study we suggest this replication to a significant sample of the Portuguese population and in other Latin cultures, such as Spain and Italy currently facing economic difficulties similar to Portugal. Thus it might be possible to define a typology of ethical values of Latin societies in contrast to, for example, the Nordic ones.

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References

- Anand P.; Wailoo A. (2000) Utilities versus rights to publicly provided goods: arguments and evidence from health care rationing. *Economica*, 67(268): 543–577
- Bardin, L. (2013) *Análise de conteúdo*. Lisboa: Edições 70
- Childress J. ‘Who Shall Live When Not All Can Live.’ *Soundings* 53, 1970: 339–355. Reprinted: *Intervention and Reflection: Basic Issues in Medical Ethics*, pp 497–505 edited by Ronald Munson Belmont California: Wadsworth Publishing Company, 1983
- Coast, J. (2000) Explicit rationing, deprivation, disutility and denial disutility: evidence from a qualitative study in *The Global Challenge of Health Care Rationing* edited by A. Coulter and C. Ham. Milton Keynes. Open University Press
- Culyer, A.; Wagstaff, A. (1993) Equity and equality in health and health care. *Journal of Health Economics*, 12:431-457
- Diederich, A.; Winkelhage, J.; Wirsik, N. (2011) Age as a criterion for setting priorities in health care? A survey of the German public view *PLoS ONE* 6(8): e23930. doi:10.1371/journal.pone.0023930
- Dolan, P., Shaw, R., Tsuchiya, A., Williams, A. (2005) QALY maximization and people’s preferences: a methodological review of the literature. *Health Economics*, 14: 197-208.
- Dolan, P.; Cookson, R.; Ferguson, B. (1999) Effect of discussion and deliberation on the public’s views of priority setting in health care: Focus group study. *British Medical Journal*, 318:916-19.
- Fortes, P.; Pereira, P. (2012) Patients prioritization in medical emergencies: An ethical analysis. *Journal of the Brazilian Medical Association*, 58(3): 335-340
- Fortes, P.; Zoboli, E. (2002) A study on the ethics of microallocation of scarce resources in health care. *Journal of Medical Ethics*, 28(4): 266-300.

- Fortes, P.; Zoboli, E.; Spinetti, S. (2001) Social criteria for selecting patients in emergency services. *Revista Saúde Pública*, 35(5):451-5.
- Hadorn, D. (1991) Setting health care priorities in Oregon. Cost effectiveness meets the rule of rescue. *Journal of the American Medical Association*, 265: 2218-25
- LeGrand, J. (1991) *Equity and choice: An essay in economics and applied philosophy*. London: Harper Collins
- Mooney, G. (1987) What does equity in health mean?. *World Health Statistics Quarterly*, 40(4): 296-303
- Mooney, G. (1994) *Key Issues in Health Economics*. Harvester Wheatsheaf
- Nord, E.; Richardson, J.; Street, A. et al. (1995) Maximizing health benefits vs egalitarianism: an Australian survey of health issues. *Social Science & Medicine*, 41(10):1429-37
- Olsen, J.; Richardson, J.; Dolan, P. et al. (2003) The moral relevance of personal characteristics in setting health care priorities. *Social Science & Medicine*, 57: 1163-1172.
- Rawls, J. (1971) *A Theory of Justice*. Harvard University Press
- Sen, A. (2002) Why health equity? *Health Economics*, 11: 659-666
- Williams, A. (1997) Intergenerational equity: an exploration of the 'fair-inning' argument. *Health Economics*, 6(2): 117-32
- Williams, A.; Cookson, R. (2000) Equity in health in A. Culyer and P. Newhouse, eds. *Handbook of Health Economics*, North-Holland. Elsevier, 1863-1907
- World Bank (1993) *World Development Report*. Oxford University Press. New York