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PRIORITIZATION ATTITUDES AMONG DOCTORS AND NURSES EXAMINED BY A SCENARIO METHOD

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Abstract

Objectives: To investigate doctors' and nurses' attitudes toward 14 potential prioritization criteria.
Methods: This study was performed by using the random paired scenario method. The respondents received a questionnaire with 12 pairs of scenarios, imaginary patient cases, each of which contained two to three different prioritization criteria (e.g., child, old patient, poor patient). Respondents were asked which one of each scenario pair they would choose if only one patient could be treated. The scenarios were randomly put into 30 different questionnaire sets. There was a random selection of 241 doctors and 151 nurses in Finland, with response rates of 60.3% and 50.3%, respectively.
Results: Doctors prioritized young patients, severe disease, expensive treatments and posteriorized (negatively prioritized) demented or institutionalized patients, and patients having a self-caused disease. Children were strongly prioritized, even over serious diseases. Expensive treatments appeared to be favored by doctors, and this result cannot be explained by severity of disease. Nurses' attitudes were similar to those of doctors.
Conclusions: Children were strongly prioritized. Elderly persons were posteriorized if they had dementia or were living in institutions. Patients having a self-caused disease are posteriorized, more often by nurses than by doctors.

Keywords: Priorities in health, Rationing, Decision making, Medicalization, Empirical study

Medicine in Western countries has developed to a state where medical science and public expectations increase, but the community's ability to pay has developed slowly or recently even diminished (4), making prioritization inevitable in health care (2;5). The need for prioritization is largely understood, but making decisions has proved to be difficult. Factors such as patients' age, prognosis or severity of the disease, expected effect of the treatment, or self-induced nature of the disease have been suggested as potential prioritization criteria. Patients' age or self-caused nature of disease have generally been rejected as prioritization criteria (7;9;14).

A	B
75-year-old patient suffers from severe chronic bronchitis and emphysema due to heavy smoking.	**A homeless alcoholic has a chronic skin disease that can be treated with an ointment.**

Figure 1. An example of two randomly paired scenarios, one of which to be chosen for treatment.

Prioritization criteria have been studied by Fowler et al. (6), Nord (15), Lewis and Charny (10), Charny et al. (3), Wetle et al. (20), and Nuckton and List (16). These researchers used various scenario methods to detect attitudes toward prioritization criteria.

Young age of the patient (1;3;10;15;16), seriousness of the patient's condition (10;15), likely efficacy of treatment (15), and a self-induced nature of disease (3) were factors influencing prioritization decisions. Patient's gender, marital status, working status (3), or order of coming to treatment (15) did not effect prioritization criteria. In elderly patients, the level of dementia was a strong factor determining doctors' decisions (11).

The aim of this study was to investigate doctors' and nurses' attitudes toward 14 potential prioritization criteria by using a method we call random paired scenarios (RPS).

METHODS

This article is based on the Prioritization in Health Care Project (PRIHC Project), implemented by the University of Kuopio, Finland (8;12;13;17;18;19). Two groups were established for the RPS study: medical doctors (n = 400), randomly selected from the register of the Finnish Medical Association, and nurses (n = 300), derived randomly from the register of the Finnish Nursing Association. This research was a substudy of a larger project concerning prioritization attitudes among doctors, nurses, politicians, and the general public.

The postal questionnaire was sent to the target group in March 1995. The questionnaire consisted of a background data sheet and a RPS questionnaire.

The RPS questionnaire was formulated by creating 64 scenarios of imaginary patient cases involving different ethical value indicators, i.e., age (child, old patient), income (poor, rich patient), severity of the disease (mild, severe), prognosis of the disease (good, poor), social status of the patient (low, high), cost of treatment (inexpensive, expensive), and origin of the disease (a self-acquired illness, such as chronic bronchitis resulting from intensive smoking, permanent institutionalization of the patient, patient having signs of dementia, or an illness or injury caused by negligent behavior, e.g., an injury in a traffic accident when driving under the influence of alcohol). Scenarios were constructed so that each contained two or three indicators. In some cases random selection produced logically inconsistent indicators, and these were excluded.

In the second stage, we arranged the scenarios randomly in 12 pairs. An example of a pair is presented in Figure 1. We repeated this procedure 29 times, obtaining

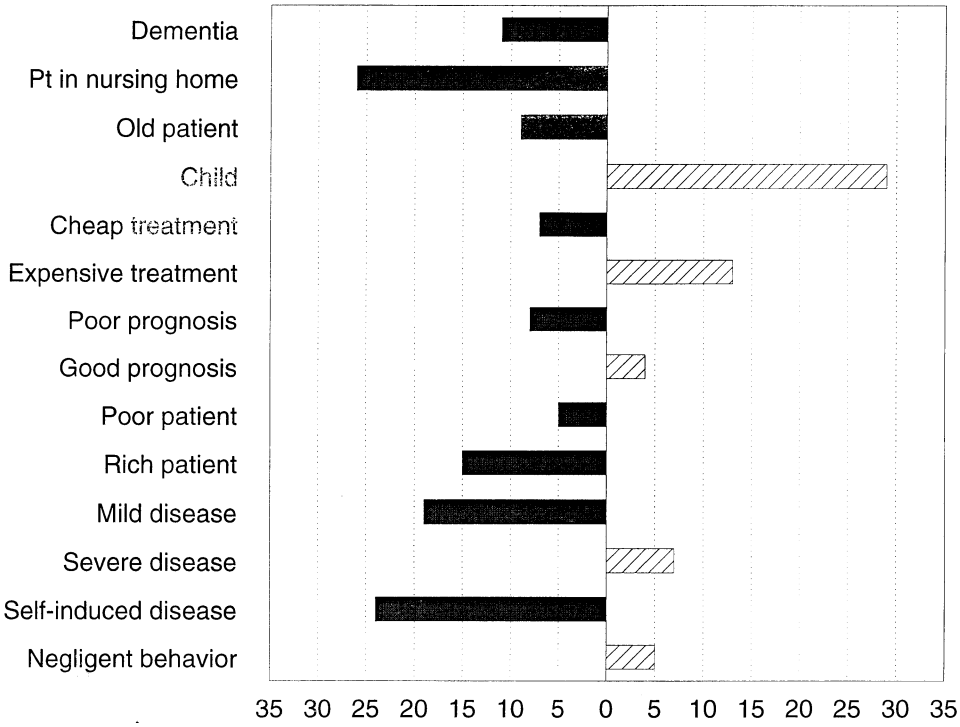

Figure 2. Summary of bivariate analysis of prioritization indicators chosen for treatment by doctors, presented as proportions (deviations from 50%) of each ethical indicator selected for treatment. Figures over 50% (bars to the right) refer to prioritization and figures less than 50% (bars to the left) refer to negative prioritization.

12 scenario pairs arranged in 30 different sets. We appended one set of 12 scenario pairs to each questionnaire, so that each questionnaire was accompanied by a different set of scenario pairs.

Subjects were asked which patient of the two presented in the scenario pair they would choose if only one could be treated. Each scenario was then classified as a winner (selected for treatment) or a loser (not selected for treatment), according to the responses. Each scenario was recorded as a single observation unit. Consequently, with 241 doctors considering 12 scenario pairs, the sample size (= number of scenarios) totaled 5,770 (24 scenarios multiplied by 241 doctors = 5,784; in seven scenario pairs data were incomplete). Similarly, 151 nurses answered to 12 scenario pairs, totaling the sample size of 3,604 (151 nurses multiplied by 12 scenario pairs = 3,624; 10 scenario pairs were missing). The statistical power of the study will thus be high. The RPS method has been discussed elsewhere (19).

The results were analyzed by cross-tabulation to calculate the number of times each ethical indicator was selected as a winner. For example, the ethical indicator "child" was chosen as a winner in 78.9% of all the scenarios where it appeared. A selection rate over 50% indicated that the variable was prioritized, exactly 50% implied a neutral attitude, and below 50% indicated negative prioritization. In figures, the proportion of winners has been presented as deviations from 50%. Thus, when the indicator "child" was chosen as a winner in 78.9% of all the scenarios, the comparable figure is +28.9. Negative numbers indicate negative prioritization.

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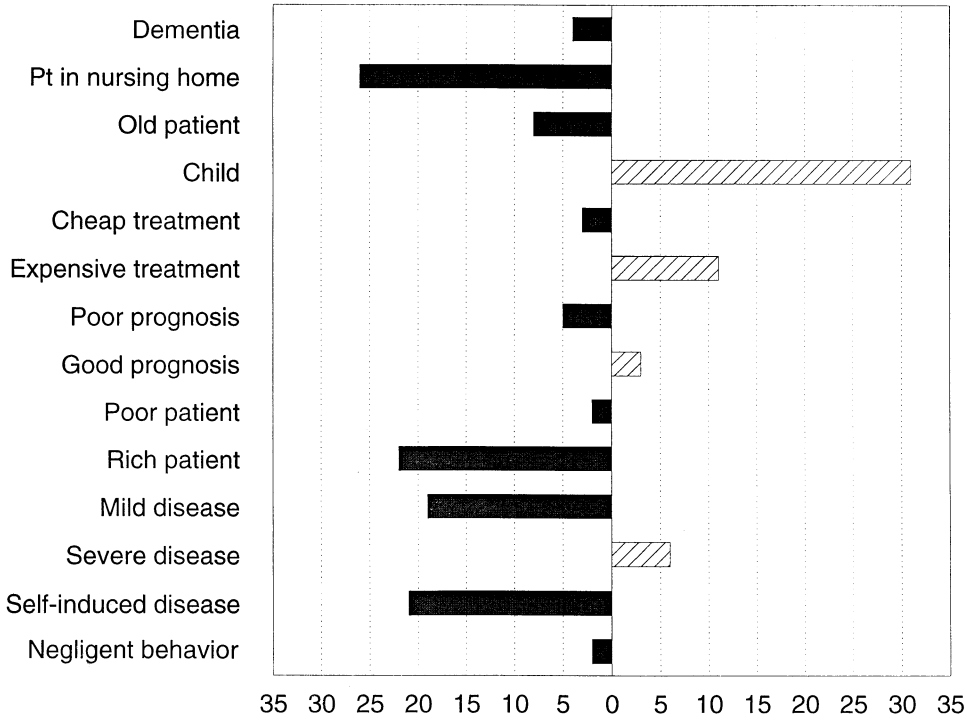

Figure 3. Summary of bivariate analysis of prioritization indicators chosen for treatment by nurses, presented as proportions (deviations from 50%) of each ethical indicator selected for treatment. Figures over 50% (bars to the right) refer to prioritization and figures less than 50% (bars to the left) refer to negative prioritization.

We also used multivariate logistic regression for the analyses. The scenario nominated as a winner (yes/no) was used as a dependent variable and all the ethical indicators as independent variables. Some of the indicators were selected as combinations. For example, the indicators "severe disease" and "child" were strongly prioritized, and therefore they were combined to investigate their interaction. Statistical analyses were performed using SPSS Win software.

RESULTS

Altogether, 241 doctors (response rate in this substudy, 60.3%) and 151 nurses (response rate of the substudy, 50.3%) returned a completed questionnaire. One hundred forty-two (59%) of the doctors and four (3%) of the nurses were men. Mean age was 41.2 years (25–62 years) in doctors and 39.2 years (22–60 years) in nurses ($p < .05$).

The results of bivariate analyses of doctors are presented in Figure 2 for doctors and in Figure 3 for nurses. Summary of logistic regression models are presented in Table 1 for doctors and in Table 2 for nurses. Both groups prioritized children, severe diseases, and expensive treatments and negatively prioritized institutionalized and demented patients and patients who had caused their disease themselves.

Doctors and nurses showed similar attitudes toward patients. Doctors' attitudes toward demented patients were stricter than that of nurses (indicator, −10.8 vs.

Table 1. Summary of Logistic Regression Model of Prioritization Indicators Among Doctors, Associated With Being Chosen for Treatment by Doctors, With Odds Ratios and 95% Confidence Intervals[a]

Indicator	Odds ratios	95% CI
Prioritization		
Child	4.7	3.8–5.7
Expensive treatment	2.3	1.8–2.8
Poor patient	1.5	1.2–1.9
Neutral attitude or statistically not significant		
Cheap treatment	1.1	0.9–1.4
Negligent behavior	1.1	0.9–1.4
Severe disease	1.1	0.9–1.3
Old patient	1.1	0.9–1.3
Negative prioritization		
Rich patient	0.8	0.6–1.0
Demented patient	0.8	0.6–1.0
Mild disease	0.6	0.5–0.7
Good prognosis	0.6	0.5–0.8
Self-caused disease	0.5	0.4–0.6
Poor prognosis	0.4	0.3–0.5
Institutionalized patient	0.2	0.1–0.3

[a] Odds ratios (OR) > 1.0 refers to prioritization; OR $= 1.0$, neutral attitude; and OR < 1.0, negative prioritization.

-3.8, $p = .05$). Doctors' attitudes toward rich patients were milder than that of nurses (indicator, -15.0 vs. -21.8, $p = .04$).

In the third stage, we performed a logistic regression analysis by combining the indicators "severe disease" and "child" together to identify the interaction. Similarly, the indicators "severe disease" and "expensive treatment" were induced as interactions. Relations between the indicators "severe disease"/"not severe disease" and "child"/"not child" were calculated from logistic regression. Results are presented in Table 3. Similarly, relations between the indicators "severe disease" and "expensive treatment" are presented in Table 4.

The combination of the indicators "severe disease" and "child" is highly prioritized, but the interaction is mostly caused by the prioritization of "child." Thus, "child" seems to be a stronger prioritization criterion than "severe disease." Nurses prioritized "child" even stronger than the doctors.

The indicators "expensive treatment" and "severe disease" were also analyzed in combination. We had a theory that prioritization of "expensive treatment" can be explained by the fact that respondents had connected it with "severe disease." This hypothesis was not supported by the study. Instead, "expensive treatment" seems to be prioritized over "severe disease" by doctors and to a lesser degree also by nurses. The results suggest that "expensive treatment" may have a separate value, which we could not explain by "severe disease." Among nurses, the separate value of "expensive treatment" was not as strong as with doctors.

DISCUSSION

The response rates were moderate (doctors, 60%; nurses, 50%). In the study as a whole, the response rates were 56% in doctors and 68% in nurses. In this substudy, the response rate of doctors was higher and the response rate of nurses was lower

Table 2. Summary of Logistic Regression Model of Prioritization Indicators Among Nurses, Associated With Being Chosen for Treatment by Nurses, With Odds Ratios and 95% Confidence Intervals[a]

Indicator	Odds ratios	95% CI
Prioritization		
Child	6.8	5.2–8.9
Expensive treatment	1.7	1.3–14.1
Poor patient	1.5	1.2–2.0
Cheap patient	1.4	1.1–1.9
Neutral attitude or statistically not significant		
Demented patient	1.3	0.9–1.9
Old patient	1.1	0.9–1.4
Severe disease	1.1	0.9–1.3
Negligent behavior	0.7	0.5–1.0
Negative prioritization		
Good prognosis	0.8	0.6–0.9
Mild disease	0.6	0.4–0.8
Rich patient	0.5	0.4–0.7
Self-caused disease	0.5	0.4–0.7
Poor prognosis	0.5	0.4–0.6
Institutionalized patient	0.2	0.1–0.3

[a] Odds ratios (OR) > 1.0 refers to prioritization; OR $= 1.0$, neutral attitude; and OR < 1.0, negative prioritization.

than in the study as a whole. The RPS questionnaire might have been thought-provoking for doctors but difficult for nurses. Because we were studying attitudes, the response rate was naturally lower than is usual in other kinds of postal inquiries. We consider that reasons not to answer have been occasional or caused by being busy, and will not cause a systematic error in results. Among nurses, we consider the response rate to be low, and the results should be interpreted with caution. The limitations are even higher in studying combinations of indicators.

Scenario, or vignette, methods seem to reveal attitudes free from social desirability, and they reflect real life better than other methods (19). Compared with previous studies, our results show similar ideas behind attitudes. "Child" and "severe

Table 3. Summary of Logistic Regression Model of Combined Prioritization Indicators "Child" and "Severe Disease" by Doctors and Nurses, With Odds Ratios and 95% Confidence Intervals

Combination of indicators	Doctors OR (95% CI)	Nurses OR (95% CI)
"Child" and "severe disease" vs. "not child" and "severe disease"	5.6 (4.3–7.3)	11.2 (7.9–15.7)
"Child" and "severe disease" vs. "child" and "not severe disease"	1.5 (1.1–2.2)	2.9 (1.8–4.5)
"Not child" and "severe disease" vs. "not child" and "not severe disease"	Not significant	Not significant
"Child" and "not severe disease" vs. "not child" and "not severe disease"	3.4 (2.1–4.6)	3.6 (2.5–5.1)
"Child" and "severe disease" vs. "not child" and "not severe disease"	7.6 (4.3–8.6)	10.3 (7.1–14.8)

Table 4. Summary of Logistic Regression Model of Combined Prioritization Indicators "Expensive Treatment" and "Severe Disease" by Doctors and Nurses, With Odds Ratios and 95% Confidence Intervals

Combination of indicators	Doctors OR (95% CI)	Nurses OR (95% CI)
"Expensive treatment" and "severe disease" vs. "expensive treatment" and "not severe disease"	Not significant	Not significant
"Expensive treatment" and "severe disease" vs. "not expensive treatment" and "severe disease"	2.7 (2.1–3.5)	1.6 (1.2–2.2)
"Expensive treatment and "not severe disease" vs. "not expensive treatment" and "not severe disease"	1.8 (1.4–2.4)	1.9 (1.4–2.7)
"Not expensive treatment" and "severe disease" vs. "not expensive treatment" and "not severe disease"	Not significant	Not significant
"Expensive treatment" and "severe disease" vs. "not expensive treatment" and "not severe disease"	2.4 (1.7–3.3)	1.8 (1.2–2.8)

disease" are prioritized in all studies, and the elderly and persons with a self-caused disease were negatively prioritized. However, our study sheds some new light on those ideas.

"Dementia" and "institutionalization" seem to be strong criteria for negative prioritization, not old age itself. Thus, doctors and nurses will not discriminate against elderly persons, but comorbidity in old age was associated with negative prioritization attitudes.

Doctors will tolerate patients who have caused their disease by negligent or even criminal behavior, e.g., drunken driving or acquiring a sexually transmitted disease. But doctors' attitudes are stricter toward a patient who had caused the disease by unhealthy life habits, e.g., obstructive pulmonary disease after having smoked tobacco for years. Thus, for doctors, patients' lifelong unhealthy habits seem more aggravating than occasional condemnable behavior.

Children and patients with a serious disease are strongly prioritized, but those two indicators combined suggest that "child" is a stronger prioritization criteria than "severe disease." This effect was seen among doctors, but more clearly among nurses. However, one must remember that a relatively small target group increases the possibility of bias in our results.

"Good prognosis" and "poor prognosis" were both negatively prioritized. This is not necessarily controversial, because the respondents may have understood "good prognosis" as exceptionally good when the patient may recover without treatment and "poor prognosis" as exceptionally poor when the patient may be dying. In both these situations it is understandable that both good and poor prognoses have been negatively prioritized.

A new result is that doctors prioritize "expensive treatment," and this attitude may not be explained by "severe disease." One study is not enough to draw final conclusions about this, but the result supports the theory that expensive, heroic medicine *per se* has a separate value for doctors. Prioritization of expensive treatments may indicate medicalization in doctors' attitudes, especially when the same effect was found to be milder among nurses.

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