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Citation for the published paper:
Werntoft, Elisabet and Hallberg, Ingalill R and Edberg, Anna-Karin.
"Prioritization and resource allocation in health care.
The views of older people receiving continuous
Public care and service "
Health expectations, 2007, Vol: 10, Issue: 2, pp. 117-28.
http://dx.doi.org/10.1111/j.1369-7625.2006.00426.x
Access to the published version may require journal subscription.
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# Prioritization and resource allocation in health care. The views of older people receiving continuous public care and service 

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#### Abstract

Objective To describe the views of people, 65 years and over, receiving continuous public care and service, on prioritization and resource allocation in health care, in relation to gender, age, housing, health-related QoL and degree of ADL dependency. Background How older people receiving continuous public care and service view prioritization and resource allocation in health care is sparsely investigated, although this group most certainly has the experience and also often is the target in discussions concerning prioritization. It is necessary, for democracy and for the development of new models of service delivery, to find out how people receiving long-term care and service view these issues. Design 146 persons, 34 men ( 23 \%) and 112 women ( $77 \%$ ), aged 66 to 100 years were interviewed face to face, following a structured questionnaire. Results The respondents thought that the patients' well-being, way of living and family situation should affect prioritization, not age per se. Resource to several health care services were considered to be below required size by a majority of the respondents. The respondents wanted doctors to decide on prioritization at an individual level and wanted higher taxes to finance increasing health care costs. Although the respondents wanted publicly financed health care, a relatively high number of them were willing to pay for treatment. Conclusions Knowledge of how older people receiving care and service view prioritization and resource allocation has not previously been available, and it seems that their views are in line with the Swedish Parliamentary Priority Commission which suggested that no account should be taken of age when allocating resources within the health care system. The result indicated that the respondents' age, gender and housing, health-related QoL and degree of dependency in ADL had little influence on their views of resource allocation.


Keywords: prioritization, older people, resource allocation, view, public care and service, dependency.

## BACKGROUND

Resource allocation and prioritization in health care is not a new issue, but an issue of growing importance since constrained resources have forced policy makers to address it more directly. Reports in the media about individuals who have been denied treatment have played an important role in bringing prioritization into the public domain [1]. Studies concerning prioritization in health care have mainly focused on the opinions of the general public or on older healthy people [2, 3]. As people's views may change when they have experiences of their own, the results of these studies cannot easily be generalised to those older people who receive continuous public care and service. According to Arber and Evandrou [4] the experiences of older people with poor health are sparsely used as expertise in the development of new models of service delivery. It is important to investigate their views as they are the prime care consumers.

Prioritization means "putting first", implying that something that is important or urgent has priority over what is less important or less urgent. Prioritization thus means opting for one thing and discarding or postponing another. The impact of prioritization will probably increase in the near future since people are living longer, and people aged 65 years and over, now form a much larger share of the population than they did before [5]. Those who use health care services most, for example in a Swedish county, Region Skåne, people aged 85 and over, accounted for $26 \%$ of the contacts with physicians and $45 \%$ of the admissions during 2004 [6]. The debate about age as a criterion for prioritization has been going on for a long time [5, 7, 8], a debate in which older people themselves rarely have been included.

Few health authorities know what values their receivers hold about prioritization in health care since earlier studies have focused mainly on the general public [9-11]. Studies have shown that old age as a criterion was viewed negatively both by younger and middleaged people as well as by physicians [12, 13]. For instance, Johannesson and Johansson [12]
found that among the 1000 randomly selected adults who were asked about life-saving treatment with regard to age, people were willing to sacrifice five 50-year-olds or thirty-five 70 -year-olds to save one 30 -year-old person. In that study, the youngest persons were 15 years old, and the mean age was 46.6 (SD 18.5). The view of old age as a lower priority may be related to the relatively young age of the sample of the study. A recent study [14, 15] including older healthy people (n=902, mean age 73, SD 10) showed that the respondents did not want to use age as criterion when making prioritization. Werntoft et al. [15] further showed that most older people (63 \%) wanted to pay instead of being on a waiting list for cataract surgery, men and young-old (60-72 years) to a significantly higher degree than women and old-old (78-84 years). Differences in relation to gender and age were found in several items; for example, women responded to a higher degree that most health services needed more resources while men had a more restrained opinion of how to finance health care costs. However, the sample in these studies was healthy and not in need of continuous care and service, and their view was thus based on little or no experience of health care.

Although many people remain fit and independent in ages above 80 years, about 16 \% of people aged 65 and over in Sweden receive care and service from the municipality, of whom $54 \%$ are living at home and $46 \%$ are living in special accommodation [16]. It has been shown that people receiving continuous municipal care and service and living in their ordinary home have significantly more hospital admissions than people living in special accommodation [17]. There is thus reason to believe that the experience of prioritization in health care might differ when related to place of living since people receiving continuous public care and service at home also are more frequent visitors to hospitals.

Being dependent on help from others to maintain daily activities has been shown to lead to a lower quality of life (QoL). Hellstrom et al. [18] demonstrated that help with activities of daily living (ADL), from both informal and formal helpers at home, and a higher
number of self-reported diseases predicted low QoL. Another way to focus on how health and disability influence people's life is to measure health-related quality of life (HRQoL). Most of the existing definitions of HRQoL are in line with the WHO definition of health: a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity [19]. Stenzelius et al. [20] found that people who were dependent on help reported significantly lower HRQoL than those who were independent. This was also seen in a study by Thomé et al. [21], where receiving help with activities of daily living from others and high number of complaints was associated with low HRQoL. Thus, HRQoL may be an indicator of severity of dependency as well as of people's physical and mental health situation. Older people's views of prioritization in health care and resource allocation might thus be influenced by aspects such as living conditions, health situation and dependency.

## OBJECTIVE

The aim of this study was to describe the views of people, 65 years and over, receiving continuous public care and service, on prioritization and resource allocation in health care, in relation to gender, age, housing, health-related QoL and degree of dependency in ADL.

## MATERIAL AND METHOD

The study comprised structured interviews with people aged 65 years and over receiving continuous public care and services who participated in a national, longitudinal, ongoing study, the Swedish National study on Aging and Care (SNAC) [22]. In the care and service part a systematic, longitudinal, individually based collection of data is performed concerning municipal provision of care and services as well as data concerning the older person's functional ability, specific health care problems and living conditions [22].

## Setting and participants

The sample consisted of 146 persons, 34 men ( $23 \%$ ) and 112 women ( $77 \%$ ), aged from 66 to 100 years. The mean age of the respondents was 85 years (SD 7), for men 84 years (SD 7) and for women 86 years (SD 7). Fifty-five percent of the respondents were living in special accommodation and $45 \%$ at home (Table 1). The sample was drawn from the care and service part of the GAS study in five municipalities in the southern Sweden. All the participants gave their written informed consent. The inclusion criteria for the current study were that the participants should be 65 years and over, receiving continuous public care and service, not have any cognitive impairment, and be able to understand and speak Swedish. Nurses, working in the municipalities received information about the inclusion criteria and then asked persons whose care and service they were responsible for and who met the inclusion criteria if they would permit an interview in their home. The first author (EW) then contacted them to arrange an appointment. The data were collected during 2 months (year 2003) in two of the municipalities and during 3 months (year 2005) in the other municipalities.

## Data collection

A questionnaire was used as an interview guide comprising questions about prioritization and resource allocation, in all 24 questions with fixed response alternatives. In this paper, 21 questions are presented (see tables $2-5$ ). The questions focused on diseases in old age for which there are feasible treatments and diseases related to lifestyle. They were developed from a review of the literature and centred on three ethical principles: the principle of human dignity, the principle of need and solidarity and the cost-efficiency principle [23]. To test the applicability of the questionnaire 54 older persons were asked to participate in a pilot study [24] where the participants' reflections in relation to the questions were tape-recorded. The
results from the pilot study showed that both the construction and content of the questionnaire were well suited for the study group, but revealed a need for questions distinguishing between horizontal (recourse allocation) and vertical (on an individual level) prioritization and about how to finance health care. Questions from previous studies illuminating these aspects were therefore added to the questionnaire [24].

The interview also included questions concerning demographic data, HRQoL and need of help with ADL. To measure HRQoL the Short-Form Health Survey (SF-12) [25] was used. SF-12 is a short form of SF 36 [26] that has shown to be useful as a health status instrument in large community-based studies of older people [27]. The instrument consists of two components: physical component summary (PCS) and mental component summary (MSC). PCS covers questions about Physical Functioning, Role-Physical, Bodily Pain and General Health, while MCS covers questions about Vitality, Social Functioning, RoleEmotional and Mental Health. The score in each component summary is standardised to range from 0 (poorest well-being) to 100 (highest well-being), and no overall score can be calculated [25]. Jakobsson [28] showed, in a Swedish sample of 4278 older people living at home as well as in special accommodation (response rate $51 \%$ of 8500 ), that the mean value for PCS/MCS in the age group 75-105 years was 37.5/50.3.

To assess dependency, information about personal activities of daily living (PADL) and instrumental activities of daily living (IADL) was collected, six PADL items from Katz's ADL Index [29], bathing, dressing, going to the toilet, transfer, continence and feeding, and four IADL items from Hulter Åsberg and Sonn [30]: cleaning, shopping, transportation, and cooking. Each item is graded $0-1$, where 0 indicates no dependency and 1 dependency on help from someone to perform the activity. The summarised score for IADL ranges between 0-5 and for PADL between 0-6 [30]. One additional IADL item, laundry, was also used in accordance with Karlsson et al. [31].

The first author and another registered nurse carried out the interviews, which lasted from 30 to 90 minutes, in the respondents' home or in special accommodation. The interviews were tape recorded and transcribed. The qualitative analysis of the transcribed interviews is reported elsewhere [32].

## Analyses

Comparison between groups were made using Chi-square for categorical data. For comparisons the sample was divided into: the young-old, 66-84 years, and the oldest, 85-100 years. The median value was used to divide the groups into high and low PCS and MCS in HRQoL. A multiple logistic analysis regression (forward, LR) was carried out with preference for wanting to pay for cataract surgery (' 1 '). The entered independent variables were HRQoL (PCS and MCS), IADL, PADL, housing, sex and age. For the regression analysis IADL was divided into no/minimal/moderate (0-3) and much/total dependency ( $>4$ ), while PADL was divided into no/minimal dependency (0-2) and slight to total dependency (>3). Also $a$ multinomial logistic regression analysis was performed with the independent variables sex, age groups, housing, HRQoL (MCS and PCS), IADL and PADL as covariates. Different prioritization criteria were dependent variables. Confidence intervals (CI) of $95 \%$ were calculated for the odds ratio (OR). Statistical data analysis was performed with the SPSS, version 11.5.

## Ethical considerations

There was a risk that the respondents' willingness to participate in the study would be influenced by the fact that they were in a state of dependence on the nurses asking them to participate. The respondents had however earlier agreed to participate in the GAS study, and the advantage of having information from a well-known person was judged to be more ethical
as this group were vulnerable. The inclusion of people in a rather poor health condition could further be criticised. The value of including people that probably have experienced prioritization, however, made the advantages outweigh the disadvantages. Another ethical issue is related to the discomfort that questions about prioritization can arouse. The questionnaire was however used in a structured interview and the respondents were supported to narrate their thoughts in relation to the questions asked. The choice of this procedure was based on previous reports from the literature [24, 33] indicating a need for the respondents to explain their standpoints in relation to each question to avoid discomfort. Permission for the study was obtained from the research ethics committee of Lund University (LU 650-00).

## RESULTS

## Prioritization in health care

Eighty percentage of the respondents stated that neither young age nor old age should be a reason for prioritization in health care or for life-saving treatment, though this was stated by fewer of the respondents who were dependent in P-ADL (78 \%) than respondents who were not (85 \%) ( $p=0.018$ ) though (Table 2). Seventy-five percentage of the oldest responded that old age should not affect prioritization at all, whilst this view was less frequent among the young-old respondents (59 \%) ( $p=.023$ ). The multinomial logistic regression analysis showed that young-old age group was associated with the view that being old should affect prioritization decision "much" (OR=4.43; $95 \%$ CI 1.28-15.23 $p=0.018$ ) with "not at all" as reference. When having to choose between three patients who needed a kidney transplant, the youngest patient was prioritised by $92 \%$ of respondents whilst pain was the strongest criteria for prioritization (65 \%) when choosing between patients in need of a new hip joint. People living in special accommodation prioritized pain to larger extent (72 \% vs $56 \%$ ) while people living at home were more likely to prioritize age to a larger extent ( $33 \%$ vs $16 \%$ ) when
choosing between patients for a new hip joint ( $p=0.050$ ). Respondents with low MCS (74 \%) also to a gave higher priority to pain than respondents with high MCS (53 \%) $(p=0.030)$. When choosing between patients to have cataract surgery, a healthy 80 -year-old patient was prioritised before a younger patient with dementia ( $64 \%$ vs $13 \%$ ) (Table 2). The multinomial logistic regression analysis showed that belonging to the oldest age group was significantly associated with prioritizing a 60-year-old with dementia should have the cataract surgery ( $\mathrm{OR}=3.66$; $95 \%$ CI 1.01-13.30 $p=0.048$ ) with an 80 -year-old healthy person as reference.

When choosing between patients for treatment the patient's importance for family support was the strongest criterion (65 \%) while the patient's age was the most important factor for $28 \%$ of the respondents (Table 3). When choosing between patients with lifestyle-related or self-inflicted diseases, a patient who was an alcoholic was prioritised for treatment by $6 \%$, a smoker by $20 \%$, a woman who had gone through several abortions by $31 \%$ and a football player by $43 \%$ of the respondents (Table 2). The smoker was prioritised by $17 \%$ of the women and $32 \%$ of the men and the football player by the $47 \%$ of the women and $32 \%$ of the men but these differences were not statistically significant..

The two alternatives that most respondents stated should affect prioritization "much" were the severity of the disease (78 \%) and the prognoses of the disease (60 \%) (Table 4). Women more than men $(p=0.035)$ and respondents with high MCS more than respondents with low MCS ( $p=0.026$ ) thought that the prognosis of the disease should affect prioritization. Indicators that the respondents thought should have low impact on prioritization were wealth (91 \%), when the disease was self-inflicted (76 \%), being in an institution (70 \%) and age (67 \%) (Table 4).

According to $91 \%$ of the respondents the doctors should decide on prioritization between patients, while $72 \%$ also thought that doctors should decide on resource allocation. Significant differences were seen related to housing, as $68 \%$ of the respondents living at
home wanted the doctors to decide on resource allocation compared with $76 \%$ of the respondents living in special accommodation ( $p<0.001$ ) (Table 3). Significant differences were also seen in relation to HRQoL, with $58 \%$ of the respondents with low PCS wanting the doctors as decision makers in resource allocation compared to $82 \%$ of the respondents with high PCS ( $p<0.001$ ).

## Financing the increasing health care costs

Seventy-three percentage of the respondents stated that patients should be effectively treated regardless of the expense, $78 \%$ of the young-old and $62 \%$ of the oldest ( $p=0.044$ ), and only 11 \% thought a cheaper but less efficient treatment should be used before a better one.

Respondents with high PCS (57 \%) more than respondents with low PCS (32 \%) thought that if patient have caused the disease themselves they should pay for treatment ( $p=0.012$ ) (Table 5).

The level of resources allocated to psychiatric care were considered to be below that required by $67 \%$ of the respondents, by women (76 \%) to a significantly higher extent than by men (41 \%) ( $p=0.010$ ). Other services that were felt to be receiving too few resources were health education, according to $60 \%$, dental service, $59 \%$, hospital care, $56 \%$, and end-of-life care by 51 \% (Table 4). Sixty-eight percentage of the respondents with low PCS thought that elder care got too little resources compared to $44 \%$ of the respondents with high PCS ( $p=0.010$ ). The only service that the respondents thought received sufficient resources was child care. Health-care administration was considered to have too little resources by $40 \%$ of respondents, fewer men (25 \%) than women (44 \%) ( $p=0.018$ ) and fewer respondents living at home ( $31 \%$ ) than in special accommodation (49 \%) ( $p=0.037$ ).

To finance the increasing health care costs, $8 \%$ of the respondents considered reduction of the public expenses, $4 \%$ higher patient fees and $8 \%$ private health insurance as
alternatives, while increases in general taxes and taxes on alcohol and tobacco were chosen by $35 \%$ and $45 \%$ respectively (Table 6). On the other hand, $48 \%$ of the respondents were willing to pay to avoid being on a waiting list for 18 months in order to have cataract surgery, $58 \%$ of the respondents in the young-old age group and $39 \%$ in the oldest age group ( $p=0.027$ ). The multiple logistic regression showed that factors most significantly associated with willingness-to-pay (WTP) €1100 for cataract surgery were belonging to the youngest age group (66-84 years) (OR=2,22; $95 \%$ CI 1.1-4,48 $p=0.020$ ). Neither gender, housing, high or low PCS and MCS, nor the degree of dependency in PADL or IADL was associated with WTP. Gender and HRQoL had no influence on the view of resource allocation, while the multinomial logistic regression analysis showed that "agreement" with the statement "no more expenditure cuts can be performed in health care" was associated with having much or total dependency in ADL (OR=6.32; 95 \% CI 1.52-26.20 $p=0.011$ ) and with living in special accommodation ( $\mathrm{OR}=3.77$; $95 \%$ CI 1.20-11.86 $p=0.023$ ) with "disagreement" as reference.

## DISCUSSION

In this study it was revealed that, according to the respondents, the way a patient should be prioritised depended on the circumstances of the patient rather than on the patient's age. This is in line with the recommendations of the Swedish Parliamentary Priority Commission, who suggested that no account should be taken of age when allocating resources within the health care system [23]. For example, in this study, pain was seen as a stronger criterion than age and so was health, when physical or mental disability was added to younger age. Dolan and Show [2] found, through focus group interviews, that the general public (aged $>18$ years) in the UK wished to take account of a number of patient characteristics when allocating donor kidneys such as the patient's age, being a parent or if the disease was self-inflicted. In this study too, the patient's importance for family support was taken into account by $65 \%$ of the
respondents and only few respondents gave priority to patients with diseases caused by alcohol or tobacco abuse. It thus seems that the patients' well-being, way of living and also family situation are regarded as being important in prioritization, by younger people in general as well as by older people.

It was clearly stated by participants that the doctor should be the one to decide in priorities. However, significantly fewer of those with a low PCS, who probably have most frequent contact with doctors, wanted the doctors to make decisions on a horizontal level, compared to participants with a high PCS. It might be that they have found that their needs have not been met in contact with doctors.

Willingness to pay for treatment varied by age. In this study, fewer of the oldest compared with the young-old preferred to pay instead of staying on a waiting list to receive treatment. The financial situation of the participants, however, did not differ between the age groups. It could be that older age implies a more restrictive view of spending money than younger age. People born at the beginning of the last century experienced hard times when growing up and raising families, which in turn might influence their WTP [4]. On the other hand, a high proportion of the respondents, in this study as well as in an earlier study [15], were prepared to pay higher taxes to cover health care. This is in some way contradictory as they were also willing to pay directly for treatment. However, a lower proportion of the respondents in this study wanted to pay to avoid a waiting list than in the previously described study [15] including people without continuous care and service ( $48 \%$ vs $63 \%$ ). One reason for this could be that people receiving public care and service are in a worse financial situation than people not receiving this service [34]. Thus, not only older age, but also being in need of care and service influence the WTP for treatment.

The result showed that the respondents wanted more resources allocated to health care. Those having much or total dependency in ADL and those living in special
accommodation, who are probably the most experienced health care consumers, thought that "no more expenditure cuts can be made in health care". This could be seen in the light of the results of Sundstrom et al. [35], who found that total spending on aged people in Sweden has stagnated, that institutional care is shrinking in both absolute and relative terms, and that public home help for older people in the community is decreasing even more. This is in contrast to the ethical principles of need and solidarity, meaning that most of the resources of care should be given to those who are most in need, devoting special consideration to the needs of the weakest, for example, children, people with dementia, and others who have difficulty in communicating with others [23]. The knowledge of how older people who receive care and service view prioritization and resource allocation has not been available until now, and this knowledge could be a valuable contribution to the debate about prioritization in health care.

Although the sample of this study is unique in that it is rare that older people are asked about their view, the sample may not be entirely representative of older people receiving continuous public care and service in Sweden as people having cognitive impairment and not being able to understand and speak Swedish were not included. Further, the representation of women in this study was slightly higher than in the population receiving municipal care and service in Sweden. When generalizing the findings it is also important to consider the Swedish context of the publicly financed health care.

## CONCLUSIONS

Patients' well-being, way of living and family situation are factors that older people think should be considered in prioritization. Although the respondents wanted publicly financed health care, a relatively high number of them were willing to pay for treatment. Resources allocated to several health services were considered to be below required size, and especially
respondents with low PCS thought that elder care received too little resources, indicating that public home help for older people in the community is insufficient. The result also indicated that the respondents' age, gender and housing had little influence on their views of resource allocation.

## ACKNOWLEDGMENTS

We are most grateful to the older persons for their participation in this study, and to the nurses involved for their support and co-operation with data collection. We are also grateful to Per Nyberg for help with statistical analysis of data, to Alan Crozier for revising the language, and to the Vardal Foundation for Health Care Sciences and Allergy Research no E2003 022/ E2005 003, and the Swedish Council for Working Life and Social Research, for financial support.

The Swedish National Study on Aging and Care, SNAC, (www.snac.org) is financially supported by the Ministry of Health and Social Affairs, Sweden, the participating county councils, municipalities and university departments.

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TABLE 1. Characteristics of the respondents.

|  | Total |  |
| :---: | :---: | :---: |
|  | \% | ( $\mathrm{n}=146$ ) |
| Gender |  |  |
| Men | 23 | (34) |
| Women | 77 | (112) |
| Age |  |  |
| Mean (SD) | 85 | (7) |
| Educational level |  |  |
| Primary, $<8$ year | 64 | (95) |
| Secondary, > 8 year | 32 | (46) |
| Tertiary, university degree | 4 | (5) |
| Marital status |  |  |
| Married | 13 | (15) |
| Widowed | 70 | (82) |
| Never married | 12 | (14) |
| Divorced | 3 | (5) |
| Living situation |  |  |
| Special accommodation | 55 | (80) |
| Ordinary home | 45 | (66) |
| Having access to $€ 1500{ }^{1}$ |  |  |
| Yes | 64 | (45) |
| No | 36 | (25) |
| Economic problem |  |  |
| Yes | 4 | (7) |
| No | 96 | (67) |
| SF12 mean |  |  |
| PCS ${ }^{2}$ | 34 |  |
| MCS ${ }^{3}$ | 56 |  |
| Katz ADL-index |  |  |
| P-ADL(0-2 >3) | 38/62 |  |
| I-ADL (0-3 >4) | 32/68 |  |
| ${ }^{1}$ Missing 52 \% <br> ${ }^{2}$ Physical component summary <br> ${ }^{3}$ Mental component summary |  |  |

TABLE 2. Priority settings. The distribution of the older persons' responses. Chi ${ }^{2}$ calculated for differences between groups.



TABLE 4. The respondents' view of how different indicators should affect prioritization, and how resources are allocated ( $n=146$ ).

|  | Respondents' evaluation |  |  |
| :--- | :---: | :---: | :---: |
| Indicators | Much <br> $\%$ | Little <br> $\%$ | Not at all <br> $\%$ |
| The severity of the disease | 78 | 13 | 9 |
| The prognosis of the disease | 60 | 25 | 15 |
| The patient is working | 36 | 25 | 39 |
| The patient is a child | 26 | 29 | 45 |
| The patient is old | 12 | 21 | 67 |
| The patient is middle-aged | 11 | 26 | 63 |
| The disease is self-inflicted | 6 | 18 | 76 |
| The patient is institutionalised | 7 | 23 | 70 |
| The patient is well off | 3 | 6 | 91 |
| Service | Too little | Enough | Too much |
|  | $\%$ | $\%$ | $\%$ |
| Psychiatric care | 67 | 30 | 3 |
| Health education | 60 | 39 | 1 |
| Dental service | 59 | 38 | 3 |
| Elder care | 57 | 43 | 0 |
| Hospital care | 56 | 41 | 3 |
| Primary health care | 52 | 46 | 2 |
| End-of-life care | 51 | 46 | 3 |
| Drug addict care | 44 | 33 | 23 |
| Health care information | 44 | 52 | 4 |
| Health care administration | 40 | 29 | 38 |
| Child care | 30 |  |  |

TABLE 5. Responses to statements on health care costs. Chi ${ }^{2}$ calculated for differences between groups.


TABLE 6. The respondents' willingness to pay. Chi ${ }^{2}$ calculated for differences between groups.

| Questions | Total | Age <br> youngold/oldest ${ }^{1}$ |  |
| :--- | :---: | :---: | :---: | :---: |
|  | $\%$ | (n=146) |  |

