

# Decision-making ability of patients undergoing invasive medical procedures

Capacidade de tomada de decisão de pacientes submetidos a procedimento médico invasivo

Capacidad de toma de decisión de pacientes sometidos a procedimiento médico invasivo

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## Keywords

Aging; Aged; Personal autonomy; Decision making; Vulnerable populations; Invasive surgical procedures

## Descritores

Envelhecimento; Idoso; Autonomia pessoal; Tomada de decisões; Populações vulneráveis; Procedimentos cirúrgicos invasivos

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## Abstract

**Objective:** To evaluate the decision-making process in patients, adults, and the elderly, who have undergone invasive medical procedures.

**Methods:** A cross-sectional, quantitative study, conducted over a period of 14 months, including 300 inpatients aged over 18 years old, divided into adults and elderly, and by sex, who had undergone invasive medical procedures. The Moral-Psychological Development tool was used to evaluate their decision-making capacity.

**Results:** A statistically significant difference was identified in the level of education of adults in relation to the elderly ( $P=0.0001$ ), where adults had more years of study than the elderly. Only two participants did not demonstrate the ability to make decisions in their best interest.

**Conclusion:** The results demonstrate the importance of involving elderly patients in decision-making about their medical treatment. Therefore, it is fundamental to develop strategies that properly reach this population, enabling autonomy and also self-determination in this stage of life.

## Resumo

**Objetivo:** Avaliar o processo de tomada de decisão em pacientes, adultos e idosos, que realizaram procedimentos médicos invasivos.

**Métodos:** Estudo transversal, quantitativo, realizado ao longo de 14 meses, incluiu 300 pacientes internados, com mais de 18 anos, divididos em adultos e idosos, e por sexo, submetidos a procedimentos médicos invasivos, foi utilizado o instrumento de Desenvolvimento Psicológico-Moral para avaliar a capacidade de tomada de decisão.

**Resultados:** Houve diferença estatisticamente significativa nos anos de estudo dos adultos em relação aos idosos ( $P=0,0001$ ), onde os adultos tiveram mais anos de estudo que os idosos. Apenas dois participantes, não demonstraram ter capacidade para tomar decisões no seu melhor interesse.

**Conclusão:** Os resultados demonstram a importância de envolver o paciente idoso na tomada de decisão sobre o seu tratamento médico. Portanto, é fundamental o desenvolvimento de estratégias que atendam adequadamente esta população permitindo a autonomia e autodeterminação também nesta fase de vida.

## Resumen

**Objetivo:** Evaluar el proceso de toma de decisión en pacientes, adultos y ancianos a los que les realizaron procedimientos médicos invasivos.

**Métodos:** Estudio transversal, cuantitativo, realizado durante 14 meses, incluyó a 300 pacientes internados, sometidos a procedimientos médicos invasivos, con más de 18 años, divididos en adultos y ancianos, y por sexo. Se utilizó el instrumento de Desarrollo Psicológico-Moral para evaluar la capacidad de toma de decisiones.

**Resultados:** Hubo diferencia estadísticamente significativa en los años de estudio de los adultos en relación con los ancianos ( $P = 0,0001$ ), donde los adultos tuvieron más años de estudio que los ancianos. Solo dos participantes no demostraron tener capacidad para tomar decisiones para su propio interés.

**Conclusión:** Los resultados demuestran la importancia de involucrar al paciente mayor en la toma de decisión sobre su tratamiento médico. Por lo tanto, es fundamental el desarrollo de estrategias que atiendan adecuadamente a esta población y que permitan la autonomía y autodeterminación también en esta fase de vida.

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## Introduction

Population aging has been revealed as a worldwide trend. Surveys conducted by the Brazilian Institute of Geography and Statistics (IBGE) show a reversal of the population pyramid, where the number of elderly will soon be higher than the number of births. Population aging in Brazil has been observed since the 1940s, initially with a mild increase in the 1960s, when a decline in fertility and a consequent reduction in population growth were detected, parallel to the continuous increase in the elderly population.<sup>(1,2)</sup>

The aging process is not the same for all individuals, but is influenced by variables such as sex, genetic inheritance, and lifestyle and by the fact that its presentation can be gradual for some, and more accelerated for others.<sup>(3,5)</sup> Normal aging, or senescence, is characterized by a gradual decrease in the ability to perform activities of daily life, exposing the individual to a period of increasing vulnerability.<sup>(5-7)</sup> This decline is gradual and progressive, both of biological and psychic functions, including cognitive functions; it begins in the post-reproductive phase, and its effect is cumulative.<sup>(6-8)</sup> Cognitive decline, in turn, is influenced by several factors, such as health, education, personality, intellectual level, years of education, and mental ability.<sup>(4)</sup>

The World Health Organization defines elderly persons by means of the age criterion and the degree of development of the country in which they live. For developed countries, individuals aged 65 or older are considered elderly, whereas in the developing world it is those aged 60 or older.<sup>(9-11)</sup> In order to facilitate the planning of health policies, the chronological classification can be subdivided into: young adult (18 to 39 years of age), adult (or middle-aged, 40 to 59 years of age), aged (60 to 70 years of age), and, very old (80 years or more).<sup>(12)</sup>

One of the factors that have contributed to the growing aging of the population is the exponential development of new technologies in the health area, as this enables diagnosis and treatment of previously unidentified health problems that could cause death. Before performing any invasive medical procedure, the health professionals, especially

the physician, should provide information on its associated risks and benefits, enabling the patient to decide whether to accept or refuse the intervention. Hospitals are standardizing the documentation of this process by using specific consent forms. These documents consolidate the process, and must be signed by the patient and/or responsible person, and by the professional who provided the information and addressed any concerns or questions.<sup>(13)</sup>

The nurse must clarify any doubts that result from the initial explanation made by the physician, specifying the preparation necessary for accomplishment of the procedure. The nursing team addresses concerns, in addition to verifying the presence of the completed consent form in the patient's record, before the patient is sent to the area where the procedure will be performed.

The autonomy and self-determination of the individual can be respected by alignment of the interdisciplinary team, which promotes individualized and safe care. This process is necessary to avoid trivialization in performing these procedures, caused by the large number and the usual manner in which they are currently completed. The nurse is frequently the professional who provides effective guidance to the patient, and clarifies the technical information that has been communicated, but which has not been adequately or completely understood; this can be explained, at least in part, by the relationship of continuity between nurses and patients. A lack of patient assertiveness may be an inhibiting factor in requesting clarification from medical staff.

Regardless of age, patients present ambiguous feelings when facing an invasive medical procedure, such as the fear related to the possible risks involved, the uncertainty of something going wrong, or fear of a bad diagnosis; however, primarily there is hope regarding the resolution or cure for their problem, making them more vulnerable to external pressures. Other important issues that may contribute to increased vulnerability include having a low level of education, or few years of education, and limited access to public health services.<sup>(14)</sup> In addition, there is the fact that vulnerable populations are often categorized as incapacitated in terms of the decision-making process.<sup>(15)</sup>

Inpatient hospitalization, coupled with the need to undergo an invasive medical procedure and the changes resulting from aging, can affect the decision-making capacity of the elderly; that is, it effects their maintenance of control over decisions about their own lives.<sup>(16,17)</sup> On the other hand, the elderly, understood as a vulnerable population,<sup>(18,19)</sup> have their rights underrepresented, including by their own family members. Decision-making is commonly performed by family members, on behalf of the elderly and what is believed to be best for them, without involving them in the decision. This type of behavior impairs the right to autonomy of the elderly.<sup>(20)</sup>

The principle of autonomy presupposes that the individual is self-governing and autonomous, both in his choices and in his actions.<sup>(21-24)</sup> From a bioethical point of view, the physician-patient relationship has three distinct characters: the physician, the patient and the society, each one with specific moral meaning: the patient is guided by the principle of autonomy, the physician by that of beneficence (*primun, non nocere*), and society by justice. Autonomy corresponds, in this sense, to the principle of freedom, beneficence to fraternity, and justice to equality.<sup>(25)</sup>

Each health professional is required to guarantee the rights of each patient, free from prejudice, regardless of their age.<sup>(26)</sup> In caring for people on a daily basis, these professionals face the challenge of understanding the existence or nonexistence of differences regarding age and sex of these patients, which can be associated with the decision-making process. It is always difficult to establish limits for the adequacy of this process.

There are numerous studies focused on the understanding of aging from a physical point of view, and the problems related to it. There are also those which analyze the decision-making capacity of individuals at different stages of life, compared with individuals of the same age group,<sup>(27,28)</sup> and at less stressful moments, such as when they have already adapted, such as in: outpatient clinics where they usually make routine visits, long-term care facilities, or elder living sites.<sup>(16,27)</sup> However, little is known about moral psychological development in relation

to evaluating the decision-making process, associated with the different phases of aging, especially when associated with a stressful moment.

Reflecting on questions related to the decision-making of adults and elderly regarding invasive medical procedures suggested to them by the physician is directly related to the respect for autonomy and self-determination of the individual, regardless of his/her age. The objective of this study is to evaluate the decision-making process in hospitalized patients, adults and elderly, who have undergone invasive medical procedures.

## Methods

This was a quantitative, cross-sectional study, conducted with patients over 18 years of age, who were undergoing invasive medical procedures, and hospitalized in surgical units of the Hospital de Clínicas of Porto Alegre (HCPA), over a period of 14 months. All patients were invited to participate in the study, and authorized their participation by means of signing a specific Terms of Informed Consent Form for this study.

The study sample consisted of 300 patients, which was the estimated number in the calculation of the sample size for the project planning. Demographic information was collected, such as: age, sex, and years of education; the instrument on decision-making ability was administered. Data collection was performed by the principal investigator during the patient's hospitalization. The participants were classified as adults, ranging in age from 18 to 59 years, and the elderly, aged 60 years or older. Subsequently, each of these groups was divided into two other subgroups, characterizing four distinct age groups: young adult (18 to 39 years), adult (40 to 59 years), aged (60 to 79 years), and very old (80 years or more).

The inclusion criteria for the present study were: being hospitalized in surgical units, in the period after undergoing the invasive medical procedure; being older than 18 years of age, being lucid and oriented, not having a medical diagnosis suggesting psychological changes, such as Alzheimer's disease

or dementia, for example. The exclusion criterion used was presenting some communication limitation that would prevent the collection of information, or any unstable clinical condition.

Decision-making capacity was assessed using the Moral-Psychological Development Tool (MPDT).<sup>29)</sup> The MPDT enables the verification of a person's ability to consent; based on several skills necessary for the decision-making process, such as the possibility to get involved in the subject, to understand and evaluate the alternatives, and the possibility to communicate his/her preference. The instrument, already validated for use in Brazilian Portuguese, has four sets of sentences, from which the participant must choose the one that best describe his/her characteristics. The instrument enables the classification of the participants within the seven different stages of moral psychological development: pre-social; impulsive; opportunist; conformist; conscientious; autonomous; and integrated. The person is considered as being morally able to make decisions in his/her best interests when classified into the stages of conformist, conscientious, autonomous, or integrated.<sup>(30)</sup> The research group received permission to use the instrument from its author.

All the information collected was gathered in a database, without direct personal identification, developed in the Microsoft Excel software. Statistical evaluations were performed using the SPSS system, version 18. The data are described in their measures of central tendency and variability. Descriptive statistical analyses were performed, including mean, median, standard deviation, and interquartile range, according to the distribution verified in the different variables. Inferential statistical measures were used to verify eventual associations or differences, using chi-square tests, Fisher's exact test, and Analysis of Variance for variants. The level of significance was established at 5% ( $P < 0.05$ ).

The research project met all the regulatory requirements of Resolution 466/12 and the other guidelines associated with research involving human beings, and was approved by the HCPA Research Ethics Committee (CAAE: 51660915.8.0000.5327).

## Results

Three hundred patients who were undergoing invasive medical procedures were included, 166 (55.3%) were adults and 134 (44.7%) were elderly. Regarding sex, 117 (39%) were males and 183 (61%) were females. The distribution of the age groups, segmented into two groups (adult and elderly) or four groups (young adult and adult, aged and very old) did not present statistically significant associations using the chi-square test for sex ( $X^2 = 2.575$ , for the two age groups;  $X^2 = 2.636$ , for the four age groups,  $p > 0.05$ -NS).

No statistically significant difference was identified between the number and age of men and women, independent of being split into two groups (adult and elderly) or four groups (young adult and adult, aged and very old).

The mean level of education, measured in years of study, in adults was  $8.78 \pm 3.74$  years, and in the elderly was  $5.88 \pm 4.01$  years. In both groups people who had no formal education were verified; one adult and seven elderly, respectively. The difference in education between the two groups, measured by the Kruskal-Wallis test, showed a statistically significant difference ( $p = 0.0001$ ), allowing the recognition that adults had more years of study than the elderly.

Specific answers on reading, writing, and making simple calculations such as addition or subtraction, found seven people that did not meet both requirement, one adult and six elderly were illiterate, predominantly among the very old.

The evaluation of moral-psychological development showed that only two (0.66%) of the 300 participants, one adult and one elderly person, did not have the capacity to make decisions that were in their best interest. Both were classified in the opportunist stage. The remaining 298 individuals were distributed in the stages: conformist, with 8.7% ( $n = 26$ ); conscientious, with 53% ( $n = 160$ ); autonomous, with 33% ( $n = 99$ ); and integrated, 4.3% ( $n = 13$ ). Consequently, 99.34% of the participants were considered capable of making decisions from the psychological-moral point of view.

## Discussion

When talking about the aging process, health can be evaluated more by elderly autonomy than by the presence or absence of disease itself; <sup>(26,30)</sup> it is necessary to understand the factors that may impair the ability of the elderly for decision-making, in order to guarantee their right to autonomy and self-determination.

In this study, only two individuals did not have the ability to make decisions in their best interest, one adult and one elderly; all others presented with a complete ability to make decisions in their best interest. These results demonstrate that decision-making is not specifically related to the advancement of age, which is different for each individual. Therefore, it is not possible to define an age limit for the loss of decision-making capacity.<sup>(27)</sup>

The results of this research strengthen previously conducted studies about common situations in the life of the elderly (without additional stressors). In a study conducted with 552 elderly people, both the institutionalized and the non-institutionalized elders presented levels of moral-psychological development compatible with the ability to make decisions in their best interest.<sup>(27)</sup> Another study performed with 133 elderly people who participated in socio-therapeutic groups, showed similar findings.<sup>(16)</sup>

Although there was no relationship between education and decision-making ability, a lower educational level was identified in the elderly sample. This result was also verified in other studies.<sup>(4)</sup> Similarly, the decreased level of education with the advancement of age, verified in this sample, has also been reported in other studies.<sup>(27)</sup>

This study showed that there is no significant difference in the ability of adults and elderly to make decisions in their best interest, and that being in a stressful situation does not make it impossible for adults and the elderly to make decisions in their best interests. Only two participants, one adult and one elderly person, did not have the ability to decide in their best interests.

Some studies highlight which factors may be associated with the increased fragility of the elderly,

such as limited access to public services, low level of education, socioeconomic status, and living in environments of greater vulnerability.<sup>(14,15,18-20)</sup>

In the present study, elderly people with low socioeconomic and low educational levels were included, and these factors did not influence the patients' decision-making ability. The issue of access to public services and living in vulnerable environments was not assessed. Therefore, the static vulnerability of study participants was not evidenced. The situation of decision-making in the face of an invasive procedure could generate a dynamic or situational vulnerability that could generate a need for greater patient support. This situation was not evaluated in this study. This can be an excellent objective for future studies in the area of decision-making: that is, to evaluate the relationships between static and dynamic vulnerability, and their influence in this process.

The results of this study emphasize the need to develop a relationship with the elderly, free of prejudiced perspectives. This will enable the elderly to take control of their own lives, autonomously.

## Conclusion

Based on the data collected and on the results obtained, it is possible to verify that almost all adult and elderly patients who were hospitalized in a general hospital, and who were undergoing invasive medical procedures, were able to make decisions in their best interest. The patients' age, sex, and level of education did not have significant associations with their ability to make decisions. These results demonstrate the importance of involving the elderly patient in the decision-making about their treatment, especially by the nurse, who keeps continuous contact with these individuals. The aging process is normal and expected, and even with the gradual decline inherent in this process, the ability to decide remains. Therefore, it is fundamental to develop strategies that adequately reach this population, allowing autonomy and self-determination in this stage

of life. Health professionals must recognize this characteristic and incorporate it into their daily actions when caring for these patients.

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## Collaborations

Wittmann-Vieira R, Goldim JR contributed to the study design, analysis, data interpretation, article writing, and final approval of the version to be published.

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