# Perceptions of Singaporeans towards informed consent: a cross-sectional survey

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## Abstract

**Introduction:** In a patient-centric health system, it is essential to know patients' views about informed consent. The objective of this study was to understand the perceptions of the local population regarding informed consent.

**Methods:** Spanning 6 weeks from January 2016 to March 2016, a cross-sectional survey of adults attending the General Surgery outpatient clinics at Tan Tock Seng Hospital was conducted. Sociodemographic data, lifestyle- and health-related information, perception and purpose of consent forms, and decision-making preferences were studied.

**Results:** A total of 445 adults participated in the survey. Most participants were aged below 40 years ($n$ = 265, 60.1%), female ($n$ = 309, 70.1%) and degree holders ($n$ = 196, 44.4%). Also, 56.9% of participants wanted to know every possible risk, while 28.3% wanted to know the common and serious risks. On multivariate analysis, age (61–74 years: odds ratio [OR] 11.1, 95% confidence interval [CI] 2.2–56.1, $P = 0.004$; age >75 years: OR 22.2, 95% CI 1.8–279.1, $P = 0.017$) was a predictor of not wanting to know any risks. Age also predicted risk of disclosure for death (age 61–74 years: OR 13.4, 95% CI 4.2–42.6, $P < 0.001$; age >75 years: OR 32.0, 95% CI 4.5–228.0, $P = 0.001$). Most participants (48.1%) preferred making shared decisions with doctors, and an important predictor was employment status (OR 4.8, 95% CI 1.9–12.2, $P = 0.001$).

**Conclusion:** Sociodemographic factors and educational level influence decision-making, and therefore, the informed consent process should be tailored for each patient.

**Keywords:** Decision making, informed consent, survey

## INTRODUCTION

Informed consent is a doctor–patient dialogue that empowers patients to make informed decisions with regards to his/her illness and proposed therapy.[1] The process involves physical assessment, discussion about illness, explanation about possible diagnoses and weighing risks versus benefits of available options, so that patients can make decisions in their best interests.[2] The patient is expected to comprehend the provided information and make decisions. Physicians in Singapore are guided by the Singapore Medical Council Ethical Code and Ethical Guidelines (SMC ECEG). The 2016 SMC ECEG states that consent must be obtained for all aspects of medical care, regardless of how high or low the risks.[2]

Consent taking is a multistep and multidimensional process that requires both the physician and the patient to communicate effectively. It is a legal obligation, as performing a procedure without patients' consent is 'battery'. It is also an ethical obligation that incorporates principles of patient autonomy, beneficence and disclosure of adequate information.[3] A physician has a duty to ensure that the patient understands and retains the information provided, and the patient has a right to withdraw or modify the consent at any time point.

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Traditionally, the Bolam–Bolitho test was used to define standard of care.[4] It was a profession-centric assessment that took into account opinions from a responsible, competent and respected group of professionals.[5] Following this, the Court of Appeal set a new standard with regards to disclosure of information in the form of a 'modified Montgomery test'.[6] The modified Montgomery test is a three-stage assessment of whether relevant and material information was withheld from the patient, whether the doctor originally had said information and if it was justifiable for the doctor to withhold that information from the patient.[7] However, in March 2019, the Singapore Ministry of Health workgroup conducted a review of legal standards for consent taking. The Civil Law (Amendment) Bill (No. 33/2020) and the Medical Registration (Amendment) Bill (No. 30/2020) were passed in Parliament on 6 October 2020. New Section 37 of the Civil Law Act provides a codified legal test to determine the standard of care for the provision of medical advice, and it will come into effect in the future (unconfirmed date). The new standard for provision of medical advice will be 'peer professional opinion', provided that the peer professional opinion is reasonable, logical and respects the need to uphold patient autonomy. For it to be logical, it must consider the comparative risks and benefits relating to the matter and must be internally consistent, not contradicting proven extrinsic facts relevant to the matter.[8] For a shared decision to be made, the care process should be collaborative between the doctor and the patient.[9,10] Varying patient characteristics, such as sociodemographic profile, education level, coping style and health literacy, impact patient choices. Thus, a new dimension of 'reasonable patient standard' has evolved over the years.

In Singapore, the median age in the population was 41.5 years as of 2020,[11] and there is a rapidly ageing population with 12.39% of the total population aged 65 years and above as of 2019.[12] The average literacy rate in Singapore was 97.5% as of 2019,[13] and English is the language most often spoken.[14] Typically, clinic consultations in Singapore are conducted in the language the patient is most comfortable with and effort is made to arrange for translators to assist in communication where required. Singapore is a multiethnic society with the majority being Chinese (78.5%),[15] and physicians try to understand the different bio-psycho-social factors of each patient to provide holistic and individualised care plans. Singapore is also encouraging adoption of digital and smart technology as part of a Smart Nation drive to digitalise multiple aspects of day-to-day living, including healthcare. The development of HealthHub®, a healthcare portal for Singaporeans to access medical records and useful information, has been useful in assisting the elderly population to keep track of their own conditions and be better informed about their healthcare choices.[16] In addition, the impact that TeleHealth measures have had in recent times could possibly change the face of the process of informed consent as well.

Since patient participation is essential in shared decision-making, it is important and relevant to understand patients' views about the informed consent process, so that clinical practice can be evidence based and guided by research.[17] Owing to the limited data available, it remains unclear how local patients perceive the process of informed consent. We conducted a cross-sectional survey of healthy adult Singaporeans to understand their perceptions and views about informed consent. The exploratory aim was to clarify a 'reasonable patient' standard in the local context and to explore potential gaps in communication and how they might be filled.

## METHODS

A 22-item survey form [Supplemental Digital Appendix 1] was administered to healthy visitors at the Tan Tock Seng Hospital General Surgery outpatient clinics 2A and 2B over a period of 6 weeks from January 2016 to March 2016. This study was approved by the National Healthcare Group institutional review board (approval number 2017/0031). Participation was voluntary, and no identifiers were collected. The participants were left to complete the survey in private and without time restriction. Inclusion criteria for participants were Singapore citizens aged at least 21 years with the mental capacity to provide written consent for the survey. Once a participant refused to participate, no further requests were made. The survey comprised personal sociodemographic data, lifestyle- and health-related information, perception of the purpose and importance of consent forms, decision-making preferences and perception of disclosure of risks. The survey was administered in English, and all the survey items were presented as multiple-choice questions with no open-ended questions.

For Singapore's population of 6 million, at 95% confidence interval and 5% margin for error, a sample size of more than 400 participants was deemed sufficient. Chi-square test was conducted to test the significance of association between demographic profile and responses to the questions. A multivariate analysis using logistic regression ('Backward Wald' method) was done to identify variables that are the most significant in predicting outcomes. A two-tailed $P$ value <0.05 was considered statistically significant. We received 451 responses and incomplete questionnaires were omitted from the data to ensure consistent sample sizes throughout the questions. The data was analysed using IBM SPSS Statistics version 22.0 (IBM Corp, Armonk, NY, USA).

## RESULTS

A total of 445 participants were surveyed. The demographic profile of the participants is shown in Table S1 [Supplemental Digital Appendix 2]. Majority of the participants were aged below 40 years ($n$ = 265, 60.1%), female ($n$ = 309, 70.1%), of Chinese ethnicity ($n$ = 369, 83.7%) and degree holders ($n$ = 212, 48.0%). Approximately half ($n$ = 244, 55.3%)

of the participants were single and lived in four- or five-room Housing and Development Board flats (*n* = 249, 55.9%).

Majority of the participants chose documenting patient's decisions (*n* = 426, 95.7%), informing patients (*n* = 422, 94.8%) and making sure that patients understand (*n* = 420, 94.4%) as the roles of consent forms and did not consider it a meaningless routine (*n* = 384, 86.3%) [Figure 1]. Young age (88.7% [*n* = 235] vs. 40% [*n* = 72], *P* < 0.0001), Chinese ethnicity (73.7% [*n* = 272] vs. 46.1% [*n* = 35], *P* < 0.0001), being single (87.8% [*n* = 223] vs. 43.6% [*n* = 82], *P* < 0.0001) and higher education status (91.5% [*n* = 194] vs. 48.5% [*n* = 113], *P* < 0.0001) were associated with the perception that the role of the consent form is litigation protection [Table 1]. Similar demographics were associated with the perception that the consent form takes away the compensation rights of patients. Old age (84.4% [*n* = 152] vs. 68.7% [*n* = 182], *P* < 0.001), non-Chinese ethnicity (86.8% [*n* = 66] vs. 72.6% [*n* = 268], *P* = 0.009), low education status (79.8% [*n* = 186] vs. 69.8% [*n* = 148], *P* = 0.015) and being married or having partners (79.8% [*n* = 150] vs. 72.0% [*n* = 183], *P* = 0.044) were associated with the perception that the role of the consent form is to discover patient preferences. Female gender was associated with the perception that the role of the consent form is for documenting patient's decision (97.4% [*n* = 301] vs. 91.9% [*n* = 125], P = 0.008) and for shared decision-making (78.3% [*n* = 242] vs. 66.9% [*n* = 91], *P* = 0.011). Young age (47.2% [*n* = 125] vs. 22.8% [*n* = 41], *P* < 0.0001), female gender (40.5% [*n* = 125] vs. 30.1% [*n* = 41], *P* = 0.038) and being single (45.3% [*n* = 115] vs. 26.1% [*n* = 49], *P* < 0.0001) were associated with the perception that the consent form is a courtesy gesture.

Figure S1 [Supplemental Digital Appendix 2] shows the data on perceived 'importance' of the role of consent forms. Informing patients (*n* = 271, 93.8%) and making sure they understand (*n* = 244, 93.1%) were considered the most important roles, while meaningless routines (*n* = 322, 95.3%) and courtesy gestures (*n* = 246, 89.8%) were considered the least important roles.

When asked about risk disclosure, most patients (*n* = 253, 56.9%) stated that they wish to know about every possible risk, while only a few patients (*n* = 9, 2.0%) indicated that they did not want to know any risks [Table 2]. There were 126 (28.3%) patients who wanted to know the common and dangerous/serious risks and 82 (18.4%) patients who wanted to know the risk of complications at <0.01 (1 in 10,000) or lower threshold. On multivariate analysis, age (odds ratio [OR] 11.1, 95% confidence interval [CI] 2.2–56.1, *P* = 0.004 for age 61–74 years; OR 22.2, 95% CI 1.8–279.1, *P* = 0.017 for age >75 years) predicted not wanting to know any risks.

When asked about how important it is to know the risk of death, most patients preferred to know the risk, irrespective of the level of risk (*n* = 327, 73.5%), while some patients did not want to know the risk of death at any level (*n* = 22, 4.9%) [Table 2]. The significant factor associated with this perception was age group, that is, age 61–74 years (OR 13.4, 95% CI 4.2–42.6, *P* < 0.001) and age >75 years (OR 32.0, 95% CI 4.5–228.0, *P* = 0.001).

Figure 2 shows the participants' preferred mode of decision making. Most of the participants voted for joint decision-making with the doctor after a thorough discussion (*n* = 214, 48.1%), followed by the doctor providing information with the

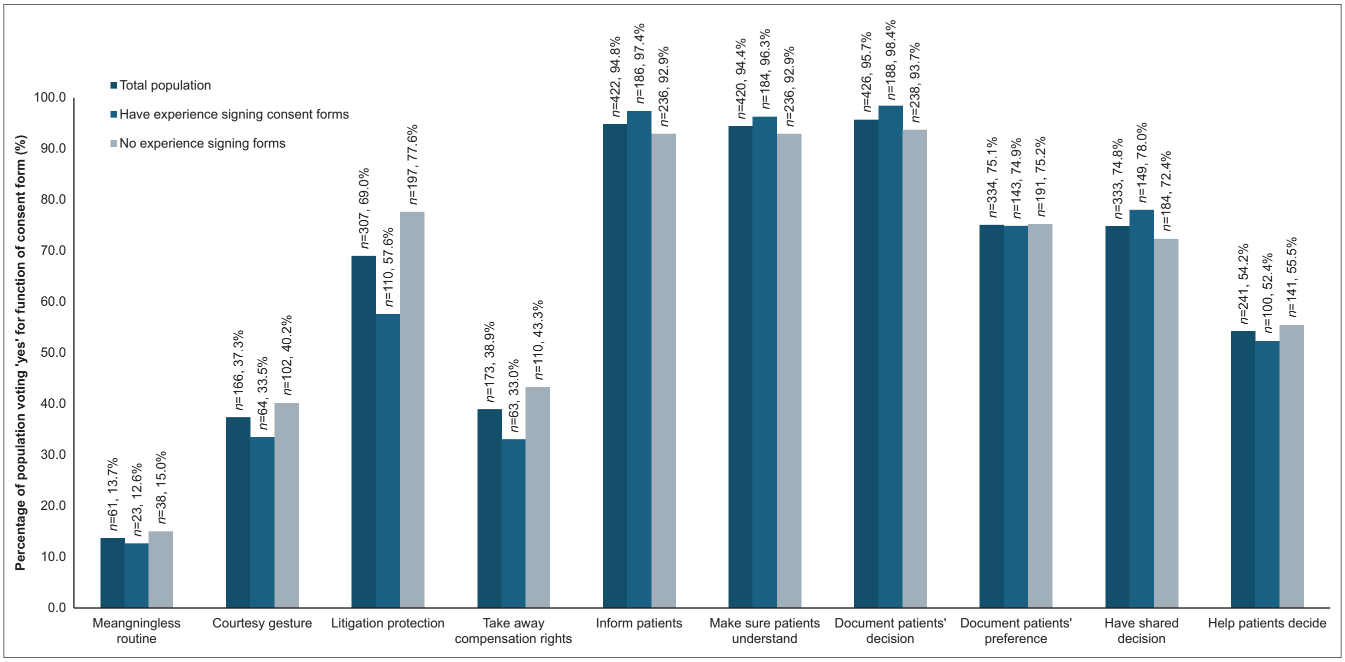

**Figure 1:** Chart shows the perception about the role of consent forms.

**Table 1. Statistically significant association between patient demographics and role of consent forms.**

| Demographic | Role of consent forms, *n* (%) | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Courtesy gesture | Litigation protection | Take away compensation rights | Inform patients | Document patient's decision | Discover patient's preference | Have shared decision | Help patients decide |
| Age range[a] | | | | | | | | |
| Younger (*n*=265) | 125 (47.2) | 235 (88.7) | 125 (47.2) | – | – | 182 (68.7) | – | – |
| Older (*n*=180) | 41 (22.8) | 72 (40.0) | 48 (26.7) | – | – | 152 (84.4) | – | – |
| Gender | | | | | | | | |
| Male (*n*=136) | 41 (30.1) | – | – | 124 (91.2) | 125 (91.9) | – | 91 (66.9) | – |
| Female (*n*=309) | 125 (40.5) | – | – | 298 (96.4) | 301 (97.4) | – | 242 (78.3) | – |
| Ethnicity | | | | | | | | |
| Chinese (*n*=369) | – | 272 (73.7) | 154 (41.7) | – | – | 268 (72.6) | – | – |
| Non-Chinese (*n*=76) | – | 35 (46.1) | 19 (25.0) | – | – | 66 (86.8) | – | – |
| Education[b] | | | | | | | | |
| Low (*n*=233) | – | 113 (48.5) | 68 (29.2) | – | – | 186 (79.8) | – | – |
| High (*n*=212) | – | 194 (91.5) | 105 (49.5) | – | – | 148 (69.8) | – | – |
| Employment[c] | | | | | | | | |
| Employed (*n*=193) | – | – | – | 176 (91.2) | – | – | – | – |
| Others (*n*=252) | – | – | – | 246 (97.6) | – | – | – | – |
| Marital status[d] | | | | | | | | |
| Married/partner (*n*=188) | 49 (26.1) | 82 (43.6) | 50 (26.6) | – | 179 (95.2) | 150 (79.8) | – | 88 (46.8) |
| Single (*n*=254) | 115 (45.3) | 223 (87.8) | 122 (48.0) | – | 245 (96.5) | 183 (72.0) | – | 153 (60.2) |
| Undisclosed (*n*=3) | 2 (66.7) | 2 (66.7) | 1 (33.3) | – | 2 (66.7) | 1 (33.3) | – | 0 (0.0) |

Note: All $P<0.05$. [a]Age range: patients aged 21–40 years and >41 years are considered 'younger' and 'older', respectively. [b]Education: 'lower education' refers to primary/secondary school qualifications and diploma holders, and 'higher education' refers to degree holders and postgraduates. [c]Employment: 'employed' includes self-employed and employee, and 'others' includes students, retirees, homemakers, unemployed or those unable to work. [d]Marital status: 'single' includes those who are single, widowed, divorced or separated from partners.

**Table 2. Disclosure of risks (*N*=445).**

| Variable | *n* (%) |
|---|---|
| Extent of knowing risks | |
| Do not wish to know any risk | 9 (2.0) |
| Only wish to know the dangerous or serious risk | 27 (6.1) |
| Only wish to know the common risks | 30 (6.7) |
| Wish to know both common and dangerous or serious risk | 126 (28.3) |
| Wish to know every possible risk | 253 (56.9) |
| Risk of death | |
| Any level, I want to know | 327 (73.5) |
| 1 in 10 | 28 (6.3) |
| 1 in 100 | 29 (6.5) |
| 1 in 1000 | 39 (8.8) |
| Any level, I don't want to know | 22 (4.9) |
| Risk of complications (not death) | |
| 1 in 100 | 253 (56.9) |
| 1 in 1000 | 110 (24.7) |
| 1 in 10,000 and lower | 82 (18.4) |

patient making the decision (*n* = 127, 28.5%). Age 61–74 years ($P < 0.0001$), diploma and degree holders ($P < 0.0001$) and being employed ($P = 0.001$) influenced individual preference. On multivariate analysis, employed individuals preferred joint decision-making (OR 4.8 95% CI 1.9–12.1, $P = 0.001$).

Majority (*n* = 254, 57.1%) of the participants did not sign a consent form before participation in this study. As shown in Figure 1, those who had experience signing consent forms reported documenting patients' decision (*n* = 188, 98.4% vs. *n* = 238, 93.7%, $P = 0.015$) and informing patients' decision (*n* = 186, 97.4% vs. *n* = 236, 92.9%, $P = 0.035$) as the roles of consent forms. They were also less likely to believe that consent forms imply the removal of compensation rights (*n* = 63, 33.0% vs. *n* = 110, 43.3%, $P = 0.027$) and are litigation protection (*n* = 110, 57.6% vs. *n* = 197, 77.6%, $P < 0.0001$). As shown in Figure 2, patients who had no experience signing consent forms were more likely to prefer joint decision-making (*n* = 129, 50.8% vs. *n* = 85, 44.5%, $P = 0.002$). They also wished to know every possible risk (*n* = 154, 60.6% vs. *n* = 99, 51.8%, $P < 0.0001$) and were more likely to want to know the risk of death at any level (*n* = 197, 77.6% vs. *n* = 130, 68.1%, $P = 0.028$) [Table S2, Supplemental Digital Appendix 2].

## DISCUSSION

Our study shows that individuals in Singapore have varied understanding about the role of consent forms, and that perceptions of informed consent are impacted by factors such as sociodemographic profile and education level. In recent era, the decision-making paradigm has shifted from a traditional

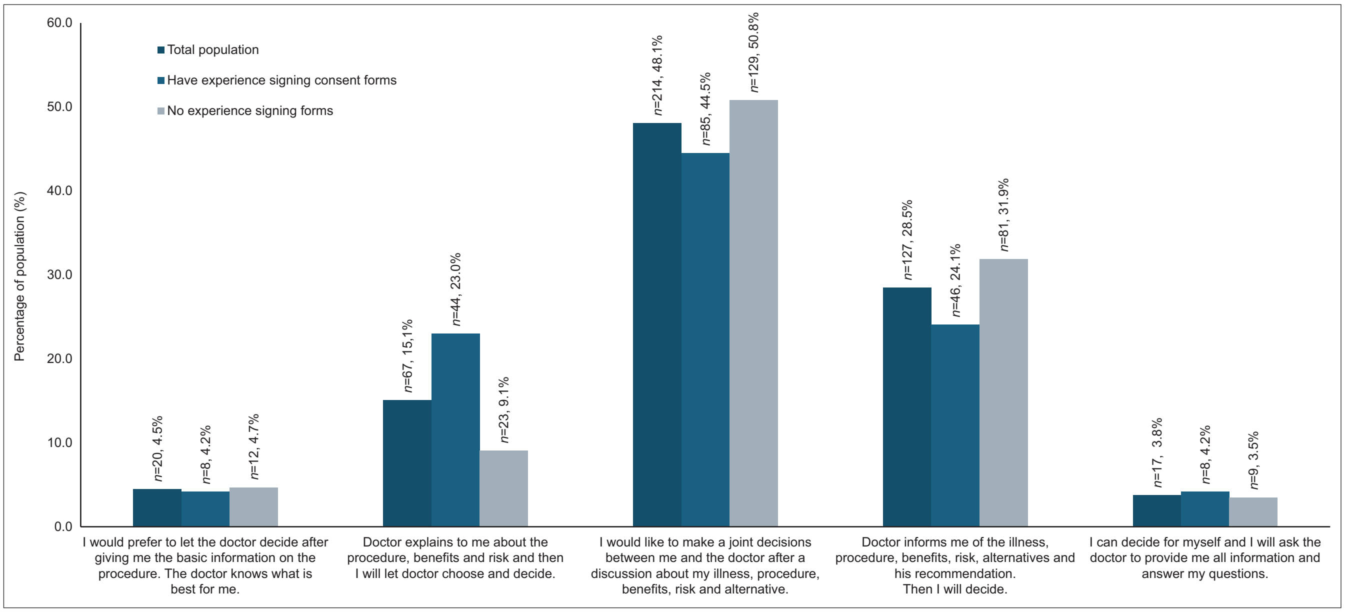

**Figure 2:** Chart shows the preferred mode of decision making.

paternalistic approach to a collaborative partnership. A doctor has an ethical duty to inform patients about the risks and benefits of the multiple management options available and to ensure that patients comprehend the information, weigh their options and communicate their decisions. As shown in our study, there is an appropriate understanding that consent forms are not meaningless routines or courtesy gestures, but rather useful tools that aid effective communication and decision-making processes.

Literacy rate is high locally and this, compounded with increased coverage of medico-legal issues by mainstream media,[6,18] could explain higher understanding of the primary role and importance of consent forms in our study. Melendo *et al.* conducted a cross-sectional survey of 374 patients undergoing elective surgery at a hospital in Brazil and found that only 44.7% of patients fully understood the written information and 57% of patients had their doubts resolved and questions clarified.[19] This difference between Singapore and Brazil may be explained by the sociodemographic and educational disparities between the countries[20] as well as the differences in culture and communication between patients and doctors in different societies. With increasing education, individuals have become more aware of individual rights.[21] Over the years, the rapid increase in public access to the Internet[22] has also increased accessibility of information and mainstream media, particularly for the youth and those with more years of education. These groups perceive the importance of litigation protection in consent forms as high [Table 1]. Youth have easy access to information (or misinformation) and can be less trusting and more skeptical of the medical system.[23] Hence, it is evident that despite a good comprehension of the primary role of consent forms across the population, healthcare professionals still have to bridge a chasm to enhance patients' understanding and role of informed consent beyond legal functions to improve shared decision-making processes. Methods to improve communication include opening platforms for discussion of such topics on social media and encouragement from healthcare professionals to inspire patients' active participation in medical decision-making. This can be done by supporting patients who do independent research about the options available and encouraging them to ask questions pertaining to their medical issue. This serves to improve their understanding that consent forms and the decision-making process are more than just a legal obligation from the medical team.

Our study also shows that elderly patients are less interested in learning about any risk or risk of death following a procedure. This could be due to a generation gap or differing perspectives on life matters. Also, the elderly patients may prefer not to participate in decision-making processes, possibly due to the paternalistic decision-making models that were frequently used in the past.[24,25] While we did not survey family members or caregivers, it is not uncommon to encounter a situation where family members (e.g., children of elderly patients) request not to disclose high risks to the patient. Physicians then have to navigate the challenges of striking a balance between patient autonomy and family wishes. Hopefully, with the new HealthHub® application providing relevant health-related information clearly, elderly patients will become more proactive about their own health and more involved in decision-making processes. Given the increased chronic disease burden in our ageing society, educating the elderly is imperative. We also suggest health literacy workshops to be conducted in community centres in Singapore. Conducting the workshops in multiple languages and using visual aids such as colour-coded diagrams would assist the elderly and low-literacy groups in understanding about their own health.[26]

Employment status is known to influence decision-making. In a cross-sectional survey including a convenience sample of 80 postoperative patients at a teaching hospital in London, UK, Davis *et al.* found that less-educated or unemployed patients are less willing to challenge healthcare staff regarding their care.[27] Our results show that employed individuals are 4.8 times more likely to choose joint decision-making. This may be closely tied to educational qualifications of the participants.[28,29] We suggest targeting groups of individuals who are unemployed, with specific focus on encouragement from physicians to involve patients in the decision-making process to help them feel comfortable asking questions without 'challenging' healthcare staff.

There are limited studies on the relationship between marital status and legal awareness in consent taking. In our study, married people are four times more likely to want to know about any form of risk compared to singles or divorcees. This could be due to parental obligations or other responsibilities. In a review paper on informed consent among females in Oman, Al Balushi reported that female patients tend to waive their decision-making rights or delegate medical decision-making to the next of kin.[30] In our study, while female patients are more likely to recognise the importance of consent form for shared decision-making, they are also more likely than males to perceive consent forms to be a courtesy gesture. This reflects the need for the incorporation of female empowerment and education in the Singapore Action Plan to Improve Health Literacy. Considering the concept of feminisation in ageing (the idea that since women outlive men, there is a predominance of women in the elderly population), health education should be targeted not only in the elderly but also women.

International studies show that in addition to self-competency, degree and severity of complication and patients' wishes also play a role in risk disclosure.[31] Our study shows that most of the participants prefer to know every possible risk and risk of death at any level. This is an important finding, and it is imperative that medical professionals are able to uphold this expectation. However, it may not be possible for medical professionals to remember and disclose every possible risk to all patients all the time. Information leaflets are increasingly prevalent in clinical practice to supplement the information provided by clinicians. A randomised controlled trial of 940 patients showed that a leaflet on mouth cancer improved knowledge of the disease ($P < 0.001$) and beliefs about the screening procedure ($P < 0.05$).[32] However, only one in four participants read the full patient information leaflet when purchasing medication.[33] In addition, a study in the UK assessing patient information leaflets for readability stated that only 24.3% of the 342 leaflets collected fulfilled the recommended reading-level criteria and over 75% were too complicated.[34] Leaflets can be made available in multiple languages and can also be accessed online or through QR codes.[35] Alternatively, scheduling a second contact session on another day may provide the patient and next of kin with ample opportunity to reflect, discuss and ask further questions. This 'cooling-off period' for the patients to consider and discuss their options is considered as meeting standards of a reasonable and responsible professional.[36] Also, the HealthHub® application can possibly be upgraded to allow patients to ask specific questions about their conditions or treatment options as and when the questions arise. Regardless of the method of risk disclosure, different individuals perceive and respond differently.[37] Like other reports, our study shows that older age is associated with less inclination to know medical information.[38-40] Giamperi reported that the delivery of clear and concise information that is compatible with the patient's expectations, level of education, understanding and personality traits is the preferred way of communication with the elderly.[41] However, the next of kin of elderly patients may seek to know more information, and this was not studied in our survey.

This study shows that participants with previous experience of giving informed consent for any procedure are better versed with the functions of consent forms, in terms of the legal and ethical aspects. Taking this into consideration, physicians can ask their patients about previous experience of giving consent (either for self or someone else), which may improve communication and encourage detailed conversations about consent taking with patients who have never provided informed consent. Furthermore, physicians may be more inclined to explain every possible risk and risk of death at any level to patients who have no experience with consent taking, as these patients are more likely to prefer having such information, as shown in our study.

There are several limitations to our study. First, the demographics of our participants differs from those of the national census. Our study included more females (70.1% vs. national average 51%), participants with higher education status (48% vs. 32.4%)[42] and employed participants (93.2% vs. 63.6%),[43] while the proportions of elderly participants (>75 years) (1.1% vs. 6.54%) and those of Malay and Indian ethnicities (15.9% vs. 22.4%)[44] were lower. Second, the survey was not procedure specific and hence, may elicit varying interpretations of questions such as those about complications. Also, the survey was conducted on healthy individuals and thus, it is possible that a person with disease could have a different perception of informed consent. A follow-up study including patients with varying levels of illness could potentially yield different results. Additionally, our study included only English-speaking adults and hence, language bias may affect the results.[29] A nationwide multilingual survey that includes multiple hospitals would potentially yield results that are more generalisable across the Singapore population. Finally, as the study population was selected from healthcare premises, the results may not be generalisable to the general population. This selection bias, however, is attenuated by the fact that our target population consisted of healthy individuals with varying levels of health-seeking behaviours. Notably, the survey may yield different results if the survey questions are categorised based on type of procedure (e.g., minor vs. intermediate vs. major). The results may also differ if the survey is conducted in siblings, family members or next of kin, and this is relevant, as it is good practice to keep the family and next of kin in the information loop.

In conclusion, our study showed that the majority of participants expect shared decision-making with medical professionals. As expectations and perceptions of informed consent are affected by one's sociodemographic profile and education status, there is no one-size-fits-all approach to consent taking. Therefore, the process of informed consent must be tailored to meet individual patient needs and expectations.

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Nil.

## Conflicts of interest

There are no conflicts of interest.

## Supplemental digital content

Appendix 1 at http://links.lww.com/SGMJ/A82
Appendix 2 at http://links.lww.com/SGMJ/A83

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## APPENDIX 1

Tan Tock Seng
HOSPITAL

# Tan Tock Seng Hospital Survey on expectations, perceived purpose and preferences of Singaporeans in decision for medical informed consenting

Dear Sir / Madam

You are invited to participate in an anonymous research survey. Only participants who are above 21 years old should participate in this study. This survey is conducted to understand the expectations, perceived purpose and preferences of Singaporeans in decision for medical informed consenting. This survey will take 8-10 minutes to complete.

Your participation is voluntary and there are no risks to you.

By agreeing to fill up this questionnaire, you imply consent to participate in this study.
We appreciate your help in completing this questionnaire.

Any query related to this survey can be forwarded to us at the email below.
E-mail: vishal_g_shelat@ttsh.com.sg

Thank you

Sincerely

Dr Shelat Vishalkumar G
Consultant Surgeon, TTSH
Telephone – 6357 7807

# Tan Tock Seng Hospital Survey on expectations, perceived purpose and preferences of Singaporeans in decision for medical informed consenting

1. What is your age range? Circle the appropriate option.

   21-40 years    41-60 years    61-74 years    >75 years

2. Are you ≥ 85 years old?    Yes    No

3. What is your gender? Circle the appropriate option.

   Male    Female    Prefer not to comment or disclose

4. What is your education level? Circle the appropriate option.
   a) Primary school – PSLE or less
   b) Secondary school
   c) Diploma
   d) Degree graduate
   e) Degree Postgraduate

5. What is marital status? Circle the appropriate option.
   a) Single
   b) Married or partner
   c) Widowed
   d) Divorced
   e) Separated
   f) Prefer not to disclose

6. What is your employment status? Circle the appropriate option.
    a) Unemployed
    b) Self employed
    c) Employee
    d) Student
    e) Retired
    f) Homemaker
    g) Unable to work

7. What is your ethnicity? Circle the appropriate option.

Chinese Malay Indian Others

8. What is your type of dwelling? Circle the appropriate option.
    a) HDB flat
        i. 1-3 room
        ii. 4 room
        iii. 5 room
    b) Executive flats and others
    c) Condominium and private flats
    d) Landed property
    e) Others

*9.* Do you smoke? Circle the appropriate option.

Yes Never Ex-smoker

10. Do you exercise? Circle the appropriate option.

Regular Occasional Never

11. How often do you offer religious prayers? Circle the appropriate option.

    a) Daily

    b) Once a week

    c) Once a month

    d) I do not offer prayers

12. In general, compared to other people your age, would you say that your health is: Circle the appropriate option.

    a) Very poor

    b) Poor

    c) Fair / Average

    d) Good

    e) Excellent

13. How much difficulty on average do you have with the following physical activities? Tick the box.

|  | No or little difficulty | Some difficulty | A lot of difficulty or unable to do |
|---|---|---|---|
| Stooping, crouching or kneeling |  |  |  |
| Lifting or carrying heavy objects |  |  |  |
| Reaching or extending arms above shoulder level |  |  |  |
| Writing or handling and grasping small objects |  |  |  |
| Walking two bus stop distance |  |  |  |
| Housework such as scrubbing floor or washing windows |  |  |  |

14. Because of your health or a physical condition, do you have any difficulty? Circle the appropriate option.

| | Yes - alone | Yes – with help | No | Don't do |
|---|---|---|---|---|
| Shopping for personal items (like toilet items or medicines) | | | | |
| Managing money (like keeping track of expenses or paying bills) | | | | |
| Walking across the room? Use of cane or walker is OK | | | | |
| Doing light housework (washing dishes, light cleaning etc) | | | | |
| Bathing or showering | | | | |

15. If you answered in Question 13 above 'DON'T DO' to any activity, is it because of your poor health? Circle the appropriate option.

Yes No Not applicable

16. In the past, did you ever face a health problem where a doctor asked you to 'sign the consent form' for any medical or dental or health related procedure / treatment? Circle the appropriate option.

a) Yes, for myself

b) Yes, for my dependent children or elderly parents

c) No

17. You believe that 'signing the consent form' is – Circle the appropriate option.

| | | |
|---|---|---|
| a) Meaningless routine | YES | NO |
| b) Courtesy gesture | YES | NO |
| c) Litigation protection | YES | NO |
| d) Take away compensation rights | YES | NO |
| e) Inform patient | YES | NO |
| f) Make sure patient understand | YES | NO |
| g) Document the patient's decision | YES | NO |
| h) Discover patient's preferences | YES | NO |
| i) Have shared decision | YES | NO |
| j) Help patient decide | YES | NO |

18. From the above which do you feel are the two most important and two least important reasons? Tick 2 most important and 2 least important.

| | Most important | Least important |
|---|---|---|
| Meaningless routine | | |
| Courtesy gesture | | |
| Litigation protection | | |
| Take away compensation rights | | |
| Inform patient | | |
| Make sure patient understand | | |
| Document the patient's decision | | |
| Discover patient's preferences | | |
| Have shared decision | | |
| Help patient decide | | |

19. During the 'signing process' the doctor will explain the risks of procedure to you. To what extent do you wish to know the risks? Circle the appropriate option.

    a) Do not wish to know any risk
    b) Only wish to know the dangerous or serious risk
    c) Only wish to know the *common* risks
    d) Wish to know both common and dangerous or serious risk
    e) Wish to know every possible risk

20. What is your preferred mode of decision making? Tick the appropriate choice.

☐ I would prefer to let the doctor decide after giving me the basic information on the procedure. The doctor knows what is best for me.
☐ Doctor explains to me about the procedure, benefits and risk and then I will let doctor choose and decide.
☐ I would like to make it a joint decision between me and the doctor after a discussion about my illness, procedure, benefits, risk and alternative.
☐ Doctor informs me of the illness, procedure, benefits, risk, alternatives and his recommendation. Then I will decide.
☐ I can decide for myself and I will ask the doctor to provide me all information and answer my questions.

21. During the ‘signing process’ the doctor will explain the risks of complications (not death) to you. What level of risk for complications (not death) do you think is important for you to know? Circle the appropriate option.

    a) 1 in 100

    b) 1 in 1000

    c) 1 in 10000 and lower than that

22. During the ‘signing process’ the doctor will explain the risk of death. What level of risk of death is important to know? Circle the appropriate option.

    a) Any level, I want to know

    b) 1 in 10

    c) 1 in 100

    d) 1 in 1000

    e) Any level, I Don’t want to know

## END OF SURVEY

## APPENDIX 2

**Table S1: Demographic profile of participants (*N*=445).**

| **Variable** | ***n* (%)** |
|---|---|
| Age range (yr) | |
| 21–40 (20–39) | 265 (60.1) |
| 41–60 (40–59) | 97 (22.0) |
| 61–74 (60–74) | 78 (17.7) |
| >75 (≥75) | 5 (1.1) |
| Gender | |
| Male | 136 (30.8) |
| Female | 309 (70.1) |
| Education | |
| Primary School | 62 (14.1) |
| Secondary School | 69 (15.6) |
| Diploma | 102 (23.1) |
| Degree graduate | 196 (44.4) |
| Degree postgraduate | 16 (3.6) |
| Marital Status | |
| Single | 244 (55.3) |
| Married or have a partner | 188 (42.6) |
| Widowed | 0 (0.0) |
| Divorced | 7 (1.6) |
| Separated | 3 (0.7) |
| Prefer not to disclose | 3 (0.7) |
| Employment status | |
| Unemployed | 15 (3.4) |
| Self-employed | 22 (5.0) |
| Employee | 171 (38.8) |
| Student | 163 (37.0) |
| Retired | 59 (13.3) |
| Homemaker | 12 (2.7) |
| Unable to work | 3 (0.7) |
| Ethnicity | |
| Chinese | 369 (83.7) |
| Malay | 49 (11.1) |
| Indian | 21 (4.8) |
| Others | 6 (1.4) |
| Housing | |
| HDB (1–3-room) | 70 (15.7) |
| HDB (4-room) | 131 (29.4) |
| HDB (5-room) | 118 (26.5) |
| Executive flat | 54 (12.1) |
| Condominium and private flat | 33 (7.4) |
| Landed property | 35 (7.9) |
| Others | 4 (0.9) |

## Table S2: Relationship between Experience Signing Consent Forms and Features of Disclosure

| **Variable** | **Experience signing consent form, *n*(%)** | | |
|---|---|---|---|
| | **Never (*n*=254)** | **Prior experience (*n*=191)** | ***P*** |
| **Demographic** | | | |
| Age range[a] | | | |
| Younger | 177 (69.7) | 88 (46.1) | <0.001 |
| Older | 77 (30.3) | 103 (53.9) | |
| Gender | | | |
| Male | 75 (29.5) | 61 (31.9) | 0.502 |
| Female | 179 (70.5) | 130 (68.1) | |
| Ethnicity | | | |
| Chinese | 221 (87.0) | 148 (87.0) | 0.008 |
| Non-chinese | 33 (13.0) | 43 (22.5) | |
| Education[b] | | | |
| Lower education | 115 (45.3) | 118 (61.8) | <0.001 |
| Higher education | 139 (54.7) | 73 (38.2) | |
| Employment[c] | | | |
| Employed | 118 (46.5) | 75 (39.3) | 0.130 |
| Others | 136 (53.0) | 116 (60.7) | |
| Marital status[d] | | | |
| Married/have a partner | 87 (34.3) | 101 (52.9) | <0.001 |
| Single | 165 (65.0) | 89 (46.6) | |
| Prefer not to disclose | 2 (0.8) | 1 (0.5) | |
| **Extent of knowing risks** | | | |
| Do not wish to know any risk | 3 (1.2) | 6 (3.1) | <0.0001 |
| Only wish to know common risks | 7 (2.8) | 20 (10.5) | |
| Only wish to know dangerous/serious risk | 8 (3.1) | 22 (11.5) | |
| Wish to know both common and dangerous/ serious risk | 82 (32.3) | 44 (23.0) | |
| Wish to know every possible risk | 154 (60.6) | 99 (51.8) | |
| **Risk of complications (not death)** | | | |
| 1 in 100 | 147 (57.9) | 106 (55.5) | 0.879 |
| 1 in 1000 | 61 (24.0) | 49 (25.7) | |
| 1 in 10000 and lower than that | 46 (18.1) | 36 (18.8) | |
| **Risk of Death** | | | |
| 1 in 10 | 17 (6.7) | 11 (5.8) | 0.028 |
| 1 in 100 | 17 (6.7) | 12 (6.3) | |
| 1 in 1,000 | 15 (5.9) | 24 (12.6) | |
| Any level, I want to know | 197 (77.6) | 130 (68.1) | |
| Any level, I don't want to know | 8 (3.1) | 14 (7.3) | |

[a] Age range: patients aged 21–40 years and >41 years are considered ‘younger’ and ‘older’, respectively. [b] Education: ‘lower education’ refers to primary/secondary school qualifications and diploma holders, and ‘higher education’ refers to degree holders and postgraduates. [c] Employment: ‘employed’ includes self-employed and employee, and ‘others’ includes students, retirees, homemakers, unemployed or those unable to work. [d] Marital status: ‘single’ includes single, widowed, divorced and those separated from partners.

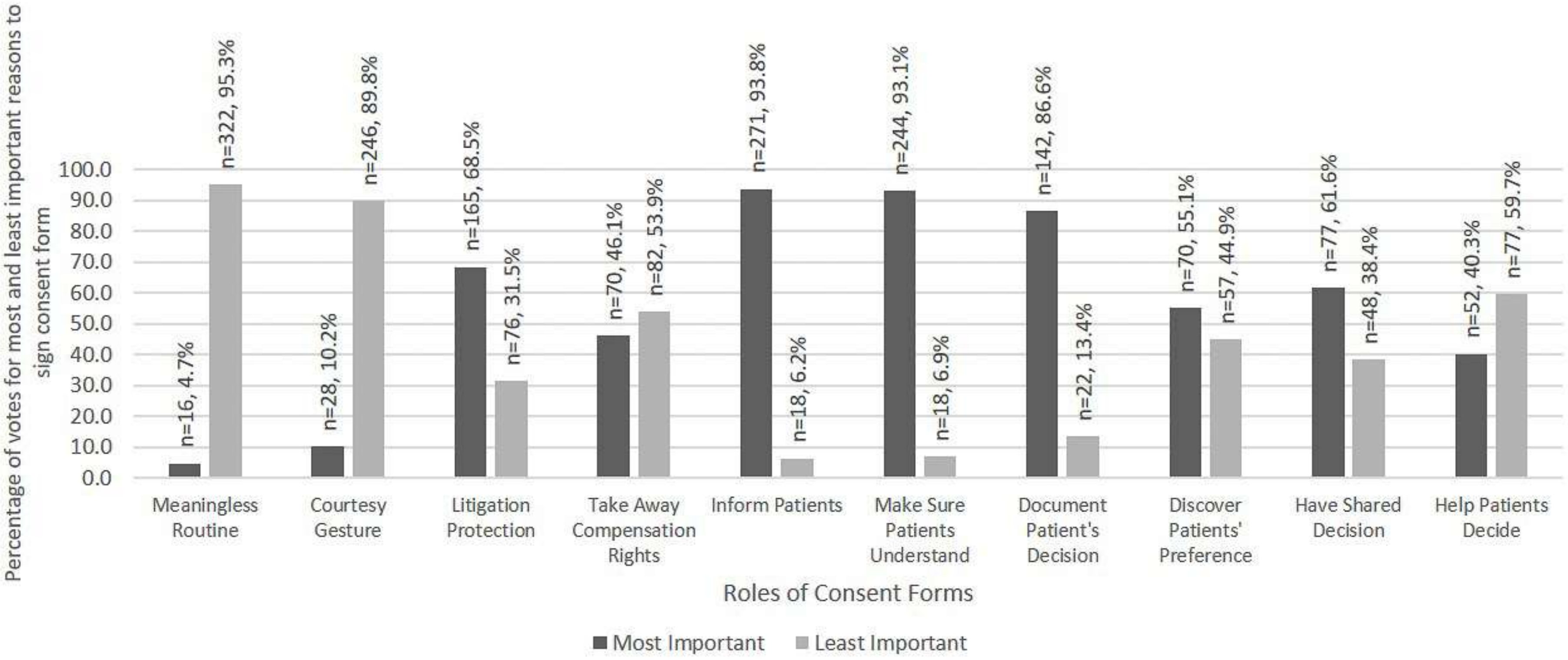

**Figure S1:** Most and Least Important role of Consent forms