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

Results: 445 adults participated in the survey. Most participants were below 40 years old ($n = 265$, 60.1%), female ($n = 309$, 70.1%) and degree holders ($n = 196$, 44.4%). 56.9% of participants wanted to know every possible risk, while 28.3% wanted to know common and serious risks. On multivariate analysis, age (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: 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 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 Singapore Medical Council (SMC) Ethical Code and Ethical Guidelines (ECEG). SMC-ECEG 2016 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 multi-step and multi-dimensional process that requires both the physician and patient to communicate effectively. It is a legal obligation, as performing a procedure without patients' consent is 'battery'. It is also an ethical obligation which 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. Traditionally, 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 '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 MOH Workgroup conducted a review of legal standards for consent taking. The Civil Law (Amendment) Bill (No. 33/2020), and Medical Registration (Amendment) Bill (No. 30/2020) were passed in the 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 effect at a date to be determined. 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⁾ In order for a shared decision to be made, the care process should be a ‘collaborative between doctor and the patient.’^(9,10) Varying patient characteristics such as socio-demographic profile, education level, coping style, and health literacy impacts patient choices. Thus, a new dimension of ‘reasonable patient standard’ has evolved over the years. In Singapore, the median age in the population is 41.5 as of 2020⁽¹¹⁾ and there is a rapidly ageing population with 12.39% of the total population being 65 and above years old as of 2019.⁽¹²⁾ The average literacy rate in Singapore is 97.5% as of 2019⁽¹³⁾ and English is the language spoken most often at home.⁽¹⁴⁾ Typically, clinic consultations in Singapore will happen in the language the patient is most comfortable speaking in and effort is made to arrange for translators to assist in communication where required. Singapore is a multi-ethnic society with a majority being Chinese (78.5%)⁽¹⁵⁾ and physicians spend time trying to understand the different bio-psycho-social factors of each patient in order to provide holistic and individualized care plans. Singapore is also encouraging adoption of digital and smart technology as part of a Smart Nation drive in order 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' view about the informed consent process such that clinical practise be evidence-based and guided by research.⁽¹⁷⁾ With little evidence available, understanding the perceptions and views of local patients remains an unmet need. We conducted a cross-sectional survey of healthy adult Singaporeans to understand perceptions and views about informed consent. The exploratory aim was to clarify a 'reasonable patient' standard in local context and to explore potential gaps in communication and how they might be filled.

METHODS

A 22-item survey form (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 Jan 2016 to Mar 2016. This study was approved by institutional review board – approval number 2017/0031. Participation was voluntary and no identifiers were collected. All participants were given no time restriction and left in private to complete the survey. Survey was only administered in English language. Inclusion criteria for participants were: Singapore citizen and age of at least 21 years old with mental capacity to provide written consent for survey. Once participant refused to participate, no further requests were made. The survey comprised of personal socio-demographic data, lifestyle and health related information, perception of the purpose and importance of consent forms, decision making preferences and perception of disclosure of risks. All the survey items were presented in multiple choice 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 > 400 participants was deemed sufficient. Chi-squared test was conducted to test the significance of association between demographic profile and responses to

the questions. A multivariate analysis using logistic regression (using 'Backward Wald' method) was done to identify which variables are most significant in predicting outcomes. A two-tailed p value of < 0.05 was considered statistically significant. A total of 451 questionnaires were replied. Incomplete questionnaires were omitted from the data to ensure consistent sample sizes throughout the questions. The data was analysed using SPSS 22.0 (IBM, Texas).

RESULTS

445 participants were surveyed. Table I shows the demographic profile of participants. Majority of participants were below 40 years ($n=265$, 60.1%), female ($n=309$, 70.1%), Chinese ethnicity ($n=369$, 83.7%) and degree holders ($n=212$, 48.0%). Approximately half ($n=244$, 55.3%) of participants were single and live in 4-5-bedroom HDB flats ($n=249$, 55.9%).

Majority of participants chose documenting patient's decisions ($n= 426$, 95.7%), informing patients ($n= 422$, 94.8%) and to make sure patients understand ($n= 420$, 94.4%) as the role of consent form and not consider it as a meaningless routine ($n=384$, 86.3%) (Fig 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% ($n=113$), $p<0.0001$) was associated with perception that the role of consent form was litigation protection (Table II). Similar demographics was associated with perception that consent form takes away 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% ($n=183$), $p=0.044$) perceived that role of consent form was to discover patient preferences. Female gender was associated with role of documenting patient's decision (97.4% ($n=301$) vs.

91.9% (n=125), $p=0.008$) and perception of shared decision making (78.3% (n=242) vs. 66.9% (n=91), $p=0.011$).. Younger (47.2% (n=125) vs. 22.8% (n=41), $p<0.0001$), female (40.5% (n=125) vs. 30.1% (n=41), $p=0.038$) and being single (45.3% (n=115) vs. 26.1% (n=49), $p<0.0001$) perceive consent form to be courtesy gesture.

Fig 2 shows the data with regards to perceived ‘importance’ of the role of consent forms. Informing patients (n=271, 93.8%) and making sure they understand (n=244, 93.1%) was considered the most important role while meaningless routines (n=322, 95.3%) and courtesy gestures (n=246, 89.8%) were considered the least important role.

With regards to disclosure of risks, when asked about the extent of knowing risks, most patients wished to know every possible risk (n=253, 56.9%) while hardly any of them (n=9, 2.0%) did not want to know any risks (Table III). 126 participants (28.3%) wanted to know common and dangerous or serious risk and 18.4% (n=82) wanted to know risk of complications at <0.01 (1 in 10000) or lower threshold. On multivariate analysis, age (OR 11.1, 95% 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) predicted not wanting to know any risks.

When asked about how important it is to know risk of death, most preferred to know, irrespective of the level or risk (n= 327, 73.5%) while few did not want to know the risk of death at any level (n=22, 4.9%) (Table III). Significant factors affecting this were age group 61-74 (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, $p= 0.001$).

Fig 3 shows that most participants voted for joint decision making with doctor after a thorough discussion (n=214, 48.1%), followed by doctor providing information with patient making the decision (n= 127, 28.5%). Age of 61-74years ($p<0.0001$), diploma and degree graduates ($p<0.0001$) 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 participants did not sign a consent form before this study participation. As per Fig 1, those who had experience signing consent forms reported documenting patients' decision (98.4% ($n=188$) vs. 93.7% ($n=238$), $p=0.015$) and informing patients decision (97.4% ($n=186$) vs 92.9% ($n=236$), $p=0.035$) as roles of consent forms. They were also less likely to believe that consent forms took away compensation (33.0% ($n=63$) vs. 43.3% ($n=110$), $p=0.027$) and are litigation protection (57.6% ($n=110$) vs. 77.6% ($n=197$), $p<0.0001$). As per Fig 3, those who have no experience signing consent forms were more likely to prefer joint decision making (50.8% ($n=129$) vs. 44.5% ($n=85$), $p=0.002$). They wished to know every possible risk (60.6% ($n=154$) vs. 51.8% ($n=99$), $p<0.0001$) and were more likely to want to know the risk of death at any level (77.6% ($n=197$) vs. 68.1% ($n=130$), $p=0.028$) (Table IV).

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 socio-demographic profile and education level. In recent era, the decision-making paradigm has shifted from a traditional paternalistic approach to a collaborative partnership. A doctor has an ethical duty to inform patients about 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 MP et al has reported a cross-sectional survey of 374 patients undergoing elective surgery at a hospital in Brazil and has shown 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 socio-demographic and education disparities between countries⁽²⁰⁾ as well as differences in culture and communication between patients and doctors in different societies. With increasing education, people are more aware of individual rights.⁽²¹⁾ There is also a rapid increase in public access to internet⁽²²⁾ over the years, which has increased accessibility of information and mainstream media, particularly to the youth and those with more years of education. These groups perceive the importance of litigation protection in consent forms as high (Table II). Youth have easy access to information (or misinformation) and can be less trusting of the medical system and rather sceptical.⁽²³⁾ Hence, it is evident that despite a good comprehension of the primary role of consent forms overall across the population, healthcare professionals have to bridge a chasm to enhance patient understanding and role of informed consent process beyond legal functions in order 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 options available and encouraging them to ask questions pertaining to the medical issue. This improves the population's understanding that consent forms and the decision making process is more than just a legal obligation from the medical team.

Our study also shows that elderly patients are less interested in learning any risk or risk of death following a procedure. This could be due to a generation gap or due to differing

perspectives on life matters. Also, the elderly may not prefer to participate in decision making processes, possibly due to the paternalistic decision-making models that were used frequently 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 patient) request not to disclose high risks to the parent (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 wish to be 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. Providing them 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 post-operative patients at a teaching hospital in London, United Kingdom, Davis RE, et al has shown 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 those groups that are not employed in similar ways as mentioned above- specifically focussing on encouragement from physicians to involve patients in decision making process in order to help patients feel comfortable asking questions without ‘challenging’ healthcare staff.

There are limited studies about the relationship between marital status and legal awareness in consent taking. In our study, married people are four times more likely wanting to know about any form of risk as compared to single or divorcee. This could be due to

obligations of parental or other responsibilities. In a review paper on informed consent among females in Oman, Al Balushi et al reports how female patients tend to waive their decision making rights or delegate medical decision making to 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 are outliving men, there is a predominance of women in the elderly population) health education in women may be targeted alongside that in the elderly.

International studies show that in addition to self-competency, degree and severity of complication and patients' wishes play a role in risk disclosure.⁽³¹⁾ Our study shows that 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 practise to supplement the information provided by clinician. A randomized controlled trial of 940 patients showed evidence that a leaflet on mouth cancer improved knowledge ($p < 0.001$) and beliefs about the screening procedure were also improved by reading the leaflet ($p < 0.05$).⁽³²⁾ However, only one in four participants reads the full patient information leaflet when purchasing medication.⁽³³⁾ Along with this, a study in UK assessing patient information leaflets for readability state that only 24.3% of the 342 leaflets collected met recommended reading-level criteria and over 75% of them were too complicated.⁽³⁴⁾ Leaflets can be made available in multiple languages and also provided through QR codes and online versions.⁽³⁵⁾ Alternative option of additional second contact session at other day may provide patient and next of kin with ample opportunity to reflect, discuss and ask further

questions. This ‘cooling-off period’ for the patient 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 for patients to ask specific questions about their conditions or treatment options as and when the questions arise. Regardless of 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⁾ Giampieri et al 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, next of kin of elderly patients may seek to know more information and this was not studied in our survey.

This study presents that participants with prior experience of giving informed consent for any procedure are better versed with the functions of consent forms- legal and ethical. Considering this, if physicians were to ask their patients about previous experiences relating to consenting, either for themselves or for someone else, it might improve communication and encourage a detailed conversation about consent taking with those who have never provided the informed consent before. Physicians might be more inclined to explain every possible risk and risk of death at any level to those who have never consented procedures before because, as per the study, they are more likely to prefer this.

There are several limitations of our study. Our demographics are not identical to national census. Our study included more females (70.1% vs. national average of 51%), higher education status (48% vs. national average of 32.4%)⁽⁴²⁾ and employed participants (93.2% vs. national average of 63.6%).⁽⁴³⁾ Elderly (> 75 years age) population (1.1% vs. national average 6.54%) and Malay and Indian ethnicities (15.9% vs. national average of 22.4%)⁽⁴⁴⁾ were lower in our study. The survey is not procedure specific and hence may elicit varying interpretations

of questions such as those about complications. The survey is conducted on healthy individuals and not patients. It is possible that a person with disease could have different perception. A follow-up study including patients with varying levels of illness could potentially yield different results. The respondents of our study were only English-speaking adults and hence language bias may affect the results.⁽²⁹⁾ A nationwide multilingual survey inclusive of multiple hospitals would potentially yield results more generalisable across the Singapore population. Finally, the population is selected from healthcare premises and hence may not be generalisable. This selection bias however is attenuated by the fact that the target population are healthy individuals with varying levels of health-seeking behaviours. Categorizing the survey questions based on type of procedure e.g. minor vs. intermediate vs. major may also yield different results. In addition, a survey of siblings or family members or next-of-kin also may yield different results. This is relevant as it is a good practise that family or next-of-kin is kept in the information loop.

In conclusion, majority of participants expect shared decision making. Expectations and perceptions about informed consent are affected by socio-demographic profile and education status. There are no one-size-fits-all and informed consenting process must be tailored to meet individual patient needs and expectations.

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Table I: Demographic profile of participants

	n=445 (%)
Age range (years)	
21-40 (20-39)	265 (60.1)
41-60 (40-59)	97 (22.0)
61-74 (60-74)	78 (17.7)
>75 (75 and up)	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 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 flats	54 (12.1)
Condominium and private flats	33 (7.4)
Landed property	35 (7.9)
Others	4 (0.9)

Table II: Association between patient demographics and role of consent forms

Role of Consent Forms	Patient Demographics and Features												
	Age range*		Gender		Ethnicity		Education**		Employment***		Marital Status****		
	Younger n=265 (%)	Older n=180 (%)	Male n=136 (%)	Female n=309 (%)	Chinese n=369 (%)	Non-Chinese n=76 (%)	Low n=233 (%)	High n=212 (%)	Employed n=193 (%)	Others n=252 (%)	Married/ Partner n=188 (%)	Single n=254 (%)	Not disclosed n=3 (%)
Courtesy Gesture	125 (47.2)	41 (22.8)	41 (30.1)	125 (40.5)							49 (26.1)	115 (45.3)	2 (66.7)
Litigation Protection	235 (88.7)	72 (40.0)			272 (73.7)	35 (46.1)	113 (48.5)	194 (91.5)			82 (43.6)	223 (87.8)	2 (66.7)
Take Away Compensation Rights	125 (47.2)	48 (26.7)			154 (41.7)	19 (25.0)	68 (29.2)	105 (49.5)			50 (26.6)	122 (48.0)	1 (33.3)
Inform Patient			124 (91.2)	298 (96.4)					176 (91.2)	246 (97.6)			
Document the Patient's Decision			125 (91.9)	301 (97.4)							179 (95.2)	245 (96.5)	2 (66.7)
Discover Patient's Preference	182 (68.7)	152 (84.4)			268 (72.6)	66 (86.8)	186 (79.8)	148 (69.8)			150 (79.8)	183 (72.0)	1 (33.3)
Have Shared Decision			91 (66.9)	242 (78.3)									
Help Patient Decide											88 (46.8)	153 (60.2)	0 (0.0)

All $p < 0.05$ *Age range considers 21-40 year olds as 'younger' and >41 as 'older' **Education considers 'lower education' to include primary school, secondary school and diploma, and 'higher education' includes degree graduate and degree postgraduate ***Employment considers 'employed' to include self-employed and employee, and 'others' to include students, retired, homemakers, unemployed or those unable to work ****Marital status considers 'single' to include single, widowed, divorced and separated

Table III: Disclosure of Risks

	n= 445 (%)
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 10000 and lower than that	82 (18.4)

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

		Experience signing consent form		
		Never signed n=254 (%)	Signed n=191 (%)	p
Demographics				
Age range*	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**	Lower education	115 (45.3)	118 (61.8)	<0.001
	Higher education	139 (54.7)	73 (38.2)	
Employment***	Employed	118 (46.5)	75 (39.3)	0.130
	Others	136 (53.0)	116 (60.7)	
Marital Status****	Married/ 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 1000	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)	

*Age range considers 21-40 year olds as 'younger' and >41 as 'older' **Education considers 'lower education' to include primary school, secondary school and diploma, and 'higher education' includes degree graduate and degree postgraduate ***Employment considers 'employed' to include self-employed and employee, and 'others' to include students, retired, homemakers, unemployed or those unable to work ****Marital status considers 'single' to include single, widowed, divorced and separated

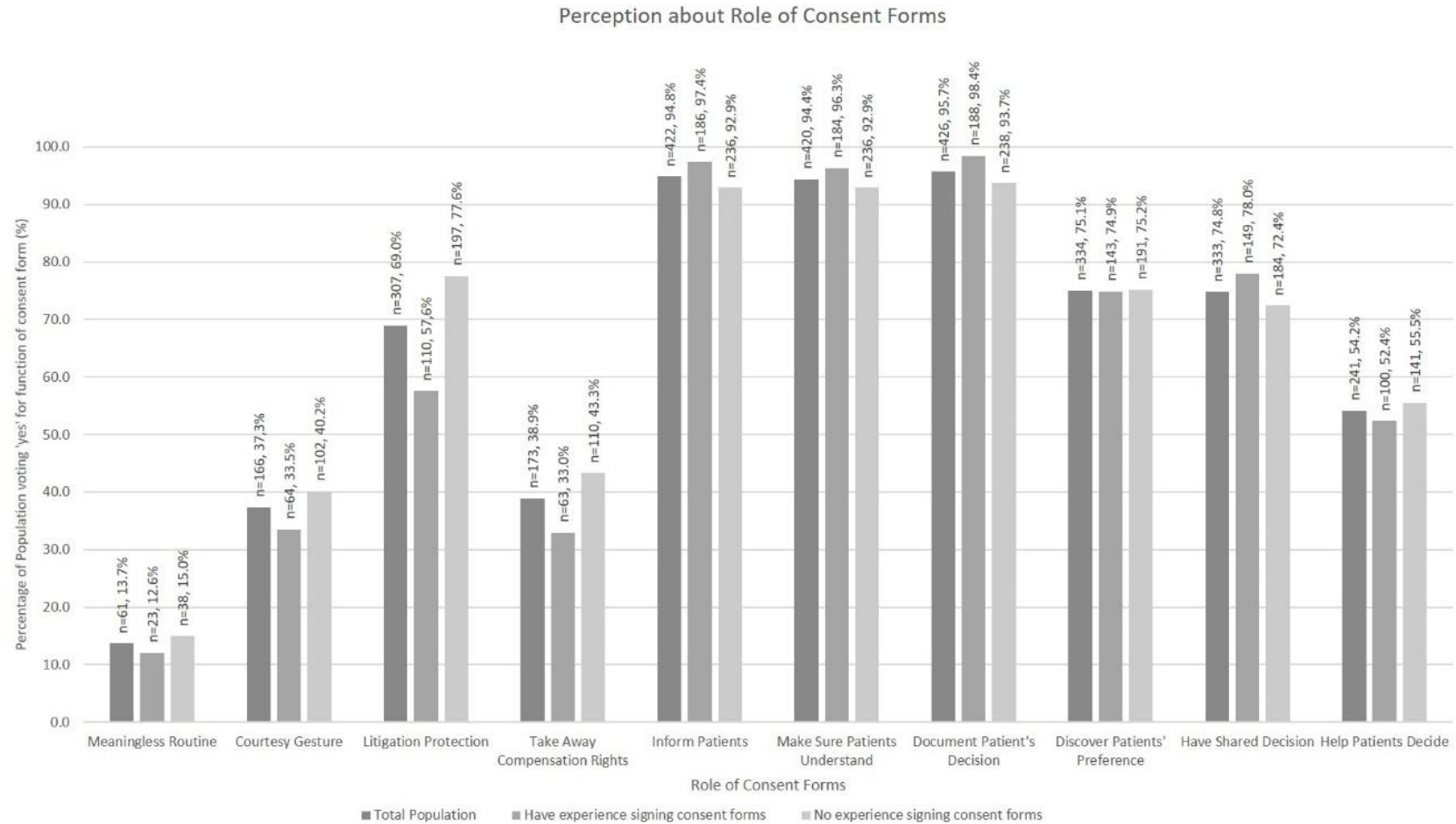


Fig 1: Perception about role of consent forms

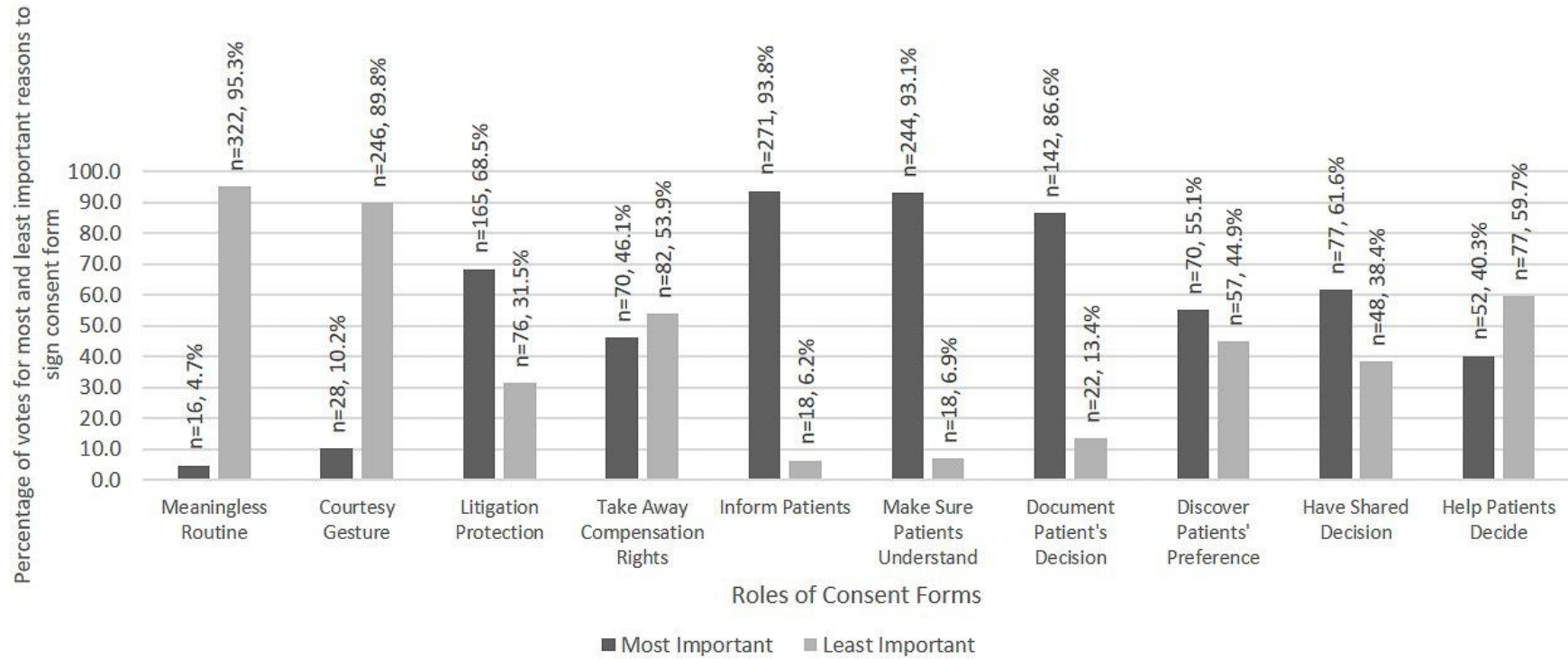


Fig 2: Most and Least Important role of Consent forms

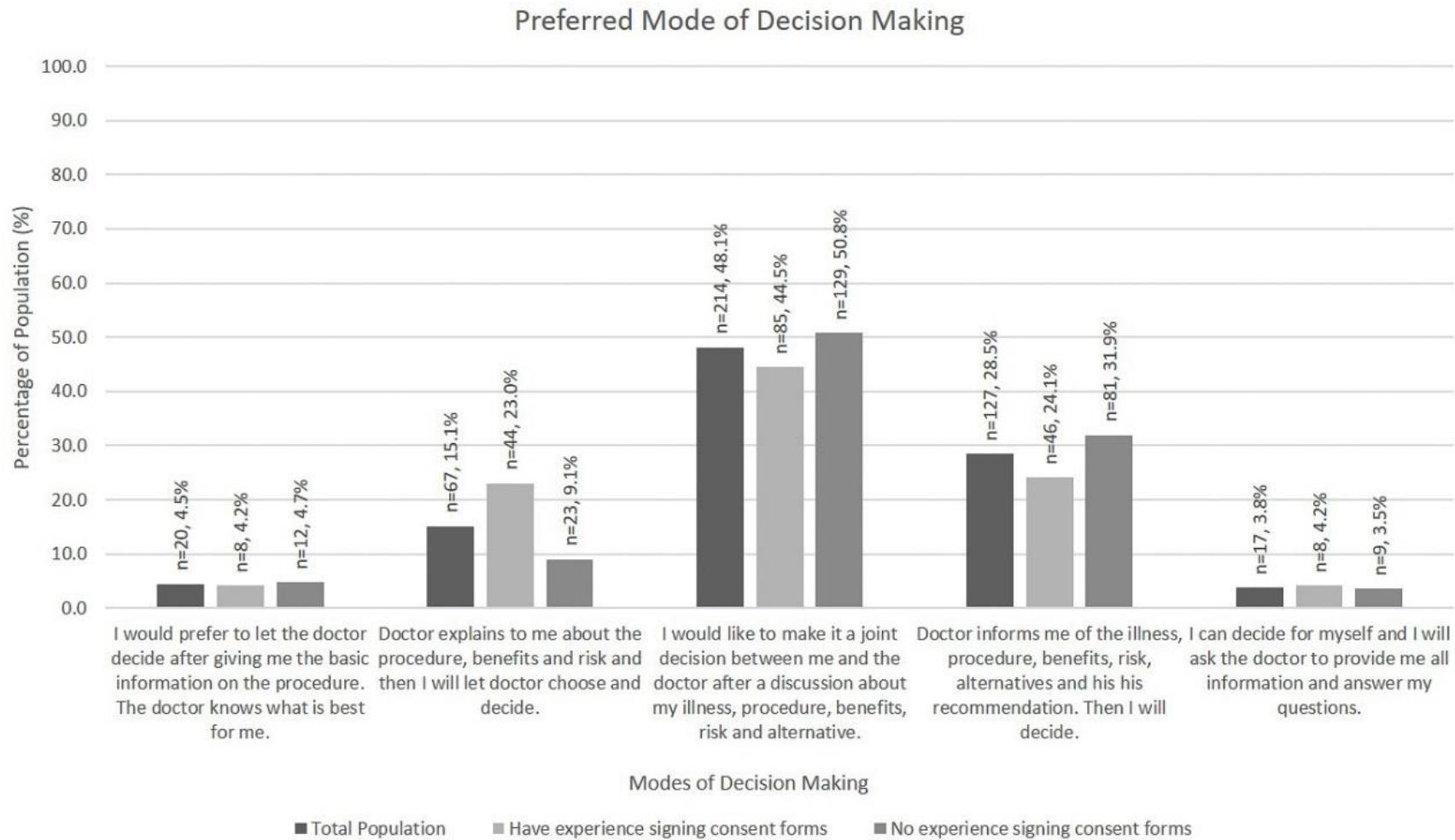


Fig 3: Preferred mode of decision making

APPENDIX**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 \geq 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