Original Article

Public Trust in Primary Care Doctors, the Medical Profession and the Healthcare System among Redhill Residents in Singapore

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Abstract

Introduction: There have been few studies on public trust in doctors and healthcare systems and this is the first in Singapore. Materials and Methods: A cross-sectional survey was carried out in Redhill in January 2005. Citizens or Permanent Residents aged ≥18 years were randomly selected, one per household to avoid cluster bias, and 361 participated (response rate 68.7%). An interview administered questionnaire included 3 questionnaires measuring public trust: "Interpersonal Trust in Physicians Scale" for primary care doctors; "Trust in Physicians Generally Scale" for the medical profession; and "Trust in Healthcare System Scale" for the Healthcare System. Questions were answered on a Likert scale: 1. Strongly Disagree, 2. Disagree, 3. Neutral, 4. Agree, 5. Strongly Agree. Individual transformed scores of trust (range, 0 to 100) were equally divided into 5 categories with their average being the transformed mean. Results: Trust in primary care doctors (mean 59.7) had proportions (prevalence rates) of: very low 0.3%, low 2.5%, neutral 40.4%, high 54.0%, and very high 2.8%. Trust in the medical profession (mean 61.8) had proportions of: very low 1.0%, low 7.7%, neutral 33.7%, high 47.0%, and very high 10.5%. Trust in the healthcare system (mean 61.5) had proportions of: very low 0.5%, low 4.1%, neutral 40.0%, high 48.7%, and very high 6.7%. For areas of the healthcare system, proportions of high/very high trust were: "Healthcare Providers' Expertise" (70.8%), "Quality of Care" (61.5%), "Patient Focus of Providers" (58.7%), "Information Supply and Communication by Care Providers" (52.3%), "Quality of Cooperation" (43.3%), and "Policies of the Healthcare System" (24.6%). Conclusions: While low proportions had low/very low trust, the high proportions with neutral trust and the rather low level of trust in "Policies of the Healthcare System" are causes for concern.

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Key words: Doctor-patient relationship, General practitioners, Physicians, Satisfaction

Introduction

"He cures most in whom most are confident"
Galen of Pergamum (AD 131-200), physician-philosopher

"The medical profession has always been held in the highest esteem by the public... This trust is contingent on the profession maintaining the highest standards of professional practice and conduct."
Singapore Medical Council Ethical Code

"Healthcare must be centred around the patient. This ensures the most appropriate care for the patient, and helps to contain healthcare costs."
Mr Khaw Boon Wan, Singapore Minister of Health, Address to Parliament, January 2005

Trust is important in the doctor-patient relationship and healthcare delivery. In this regard, there are 3 objects of trust: the personal primary care doctor, the medical profession and the healthcare system. This study has examined these 3 objects of trust in Singapore.

Various definitions of trust have been proposed, with the common thread being: *"Trust stresses the optimistic acceptance of a vulnerable situation in which the truster believes the trustee will care for the truster's best interests, irrespective of the ability to monitor or control the trustee"*.[1,2]

Trust in doctors is considered to have 5 domains: fidelity (caring and advocating for the patient's interests or welfare

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and avoiding conflicts of interest); competence (having good practice and interpersonal skills, making correct decisions, and avoiding mistakes); honesty (telling the truth and avoiding intentional falsehoods); confidentiality (the proper use of sensitive information); and global trust (the irreducible "soul" of trust, or aspects that combine elements from some or all of the separate dimensions).[3,4]

Trust in doctors gives the doctor-patient relationship meaning, importance and substance,[3] and is related to patients' willingness to seek care, reveal sensitive information, submit and adhere to treatment, participate in research, remain with a physician and recommend a physician to others.[1,5] Improved trust leads to increased efficacy, fewer demands for tests or referrals, increased use of preventive services, greater continuity, reduced disparities, increased access and improved health outcomes.[2]

Trust and satisfaction are related but independent.[1] Trust looks to expectations of the doctor's character and personality based on the doctor-patient relationship.[1] Satisfaction is a retrograde purview of the care received not requiring assumptions on the doctor's motivations.[1,6] Trust is more salient than satisfaction for measuring the quality of ongoing relationships and may be maintained even if a particular visit to a doctor is unsatisfactory.[2]

Trust in an impersonal entity like the medical profession (a product of previous contact with doctors and the image of doctors as portrayed in the media) has been distinguished from the interpersonal trust between doctor and patient (based on ongoing assessment of the doctor's behaviour over time).[4] However, trust in the medical profession plays a pivotal role in influencing initial trust in a specific doctor.[4]

Trust in the impersonal healthcare system has also been distinguished from the interpersonal trust between doctor and patient.[7] Trust in a system involves only a verbal expression of confidence based on personal experience, direct communication of other peoples' experience and on mass media communication. Interpersonal trust entails the transfer of control from one person to another in the expectation that the other's actions will satisfy his interests better than his own. Nevertheless, general trust influences the way individuals act in interpersonal trust situations.[7] Trust in the healthcare system is further defined as being confident that one will be adequately treated when in need of healthcare.[7]

The importance of studying trust in the healthcare system is twofold – at the macro-level, trust is an indicator of support for the system and changes in the system and at the micro-level, there is a relationship between trust and peoples' behaviour in real choice situations.[7]

Despite its importance, public trust in doctors and healthcare systems has been studied only recently. Since the first paper in 1979,[8] tools have been developed to measure trust in a personal doctor.[3,9,10] There have been few studies on trust in the medical profession,[4] and it is only since 2002 that studies have been done on trust in healthcare.[7,11,12]

Singapore is an island state in Southeast Asia with a resident population at end-June 2004 of 3.49 million people comprising 76.0% Chinese, 13.7% Malays, 8.4% Asian Indians and 1.8% Others.[13] A dual system of healthcare exists with a government managed public system and a private system, with freedom to choose any provider. Through licensing and subsidies, good and affordable medical services are available to all Singaporeans. There are schemes to ensure universal access and equity: Medisave (compulsory saving for medical care), MediShield (optional medical insurance) and Medifund (for persons unable to pay their medical bills).

There have been no previous population-based studies on public trust in doctors and the healthcare system in Singapore.[14,15] If we do not study and cultivate trust, we stand to lose it.[2]

This study was the Community Health Project, carried out (under supervision) by 3rd year medical students as part of the course in the Department of Community, Occupational and Family Medicine, Yong Loo Lin School of Medicine, National University of Singapore.

Materials and Methods

Sampling

Using a conservative estimate of trust of 65%, a confidence interval of 95%, and a margin of error of 5%, a minimum of 350 subjects were calculated. With an estimated response rate of 60%, a sample size of at least 583 was required, and 672 were chosen.

A 2-stage sampling method was used. In stage 1, 672 out of 3550 Housing Development Board (HDB) flats in Redhill sub-zone were randomly selected by a computer. Redhill is in the south-central part of Singapore, a highly urbanised area. In stage 2, one citizen or permanent resident aged ≥18 years was randomly selected from each flat. Only one per household was chosen to avoid cluster bias, as household members may influence one another. The individual with the next birthday was selected. This method is accurate and convenient.[16]

Questionnaire

This comprised:

1. Personal demographic factors
2. Three validated questionnaires:
i.   The "Interpersonal Trust in Physicians Scale", validated in the US and consisting of 10 questions, measures trust

in the personal primary care doctor, covering the 5 domains of trust discussed above.[3] It is internally consistent (Cronbach's alpha 0.93) and a near normal distribution, and has good discriminatory power (measured by Ferguson index) and test-retest repeatability (r = 0.75).[3]

ii. The "Trust in Physicians Generally Scale", validated in the US and consisting of 11 questions, measures trust in the medical profession.[4] It is internally consistent (Cronbach's alpha 0.89) and is correlated with satisfaction, desire to remain with a physician, willingness to recommend to friends, and not seeking second opinions.[4]

iii. The "Trust in Healthcare System Scale", validated in the Netherlands and consisting of 36 questions, measures trust in the healthcare system.[7] It covers 6 areas: "Patient Focus of Providers" (6 questions), "Policies of the Healthcare System" (6 questions), "Healthcare Providers' Expertise" (6 questions), "Quality of Care" (9 questions), "Information Supply and Communication by Care Providers" (6 questions), and "Quality of Cooperation" (3 questions). It is internally consistent (Cronbach's alpha), has good test-retest repeatability,[7] and has been used elsewhere.[7,11]

For each questionnaire, a Likert scale is used for grading, with respondents asked to choose a response to each question as:

1. Strongly Disagree   2. Disagree   3. Neutral   4. Agree   5. Strongly Agree

The questionnaire was translated into Mandarin and Malay and to ensure accuracy these were back translated to check that their meaning remained the same. Mandarin or Malay speakers were present during the relevant interviews.

Field Work

The survey took place from 8 to 17 January 2005. Interviewing on all days of the week was by pairs of medical students (1 male and 1 female) carrying identification letters and matriculation cards. Flats which were unoccupied or occupied only by foreigners were replaced by flats with the same number on the floor above. If the selected individual was overseas, replacement was by the household person having the next birthday. Persons were considered non-contactable if there was no contact after 3 attempts at different times on different days.

Data Analysis

The answers to the questions were scored 1 to 5. Questions asked in a "negative way" had reverse scoring e.g. if the person answered 1. Strongly Disagree, then the score was 5 not 1.

For each respondent, a raw score was calculated as the mean of all items in the scale, and then a transformed score

was computed, assuming a linear transformation, using the formula:[17]

$$\text{Transformed Score} = \frac{(\text{Raw Score} - 1) \times 100}{\text{Range}}$$

As the Likert scale has a maximum and minimum of 5 and 1 respectively, the range was 4. Individual transformed scores (range, 0 to 100) are used for questionnaires as they allow comparisons of trust between studies and between scales having varying numbers of questions. Their average is the transformed mean, which ranges from 0 to 100. The scores are equally divided into 5 trust categories: very low (0-<20), low (20-<40), neutral (40-<60), high (60-<80), and very high (80-100).

Results

Of the sample of 672 individuals, 178 (26.5%) refused, 104 (15.5%) were non-contactable, and 390 (58.0%) participated. Hence, of the 568 individuals contacted, 390 (68.7%) responded. Of these, 29 were excluded because of incomplete information on the trust scales, leaving 361 persons for the analysis.

Table 1 shows that the study sample is comparable to Redhill by gender, ethnic group, and socio-economic status. The sample is comparable to Singapore by gender, marital status, citizenship, and religion, though, like Redhill, it has more Chinese and fewer Malays, and more persons of lower socio-economic status as measured by flat type and monthly household income.

Table 2 shows that the transformed means are slightly lower for primary care doctors (59.7) than the medical profession (61.8) and the healthcare system (61.5) which are very similar. With a range of 0 to 100, these means show reasonable average levels of trust, being at the border between neutral and high trust.

Table 2 also shows the proportions (prevalence rates) of the 5 categories of trust and combined low/very low and high/very high categories. Most people have neutral or high trust with small proportions having very low, low, and very high trust. Just more than half of persons have high/very high trust for primary care doctors (56.8%), the medical profession (57.5%) and the healthcare system (55.4%). Proportions with neutral trust are quite large and more for primary care doctors (40.4%) and the healthcare system (40.0%) than the medical profession (33.7%). Proportions with low/very low trust are very small, being largest for the medical profession (8.7%), then the healthcare system (4.6%), then primary care doctors (2.8%).

Table 3 shows means and proportions of trust in the 6 areas of the healthcare system. Each question has equal weight and hence the values for the healthcare system as a whole (Table 2) are not averages of the 6 areas as these have

Table 1. Demographic Factors for Study Sample, Redhill and Singapore

Demographic factor	Sample %	Redhill %	Singapore %
Gender			
Male	50.0	50.6	49.9
Female	50.0	49.4	50.1
Marital status			
Single	31.0	–	30.5
Married	59.5	–	61.8
Divorced/Separated	3.1	–	2.5
Widowed	6.4	–	5.2
Ethnic group			
Chinese	83.0	85.0	76.8
Malay	7.0	6.3	13.9
Indian	9.0	8.0	7.9
Others	1.0	0.7	1.4
Citizenship			
Citizen	88.7	–	91.1
Permanent Resident	11.3	–	8.9
Religion			
Christian	14.1	–	14.7
Buddhist	45.6	–	51.1
Muslim	11.3	–	14.9
Hindu	5.4	–	4.1
No religion	18.7	–	14.9
Others	4.9	–	0.3
Flat Type			
1 or 2-room	19.0	19.1	5.7
3-room	40.3	61.2	29.2
4-room	16.7	5.7	37.7
5-room	23.8	14.0	26.9
Highest education level			
Nil	12.1	–	19.6
Primary	24.6	–	12.1
Secondary/JC/ITE	37.9	–	45.5
University/Polytechnic	25.4	–	22.8
Monthly household income			
<$1000	37.4	16.5	11.7
$1000-$3999	43.6	66.7	67.5
>$4000	17.7	15.8	20.8

Data for Redhill (some not available) and Singapore are from Census 2000.[18]

JC: Junior College; ITE: Institute of Technical Education

variable numbers of questions. "Healthcare Providers' Expertise" has the highest trust (mean 64.5, very low/low trust 2.3%, high/very high trust 70.8%), then "Quality of Care" (mean 63.8, very low/low trust 2.6%, high/very high trust 61.5%), then "Patient Focus of Providers" (mean 60.1, very low/low trust 9.2%, high/very high trust 58.7%), then "Information Supply and Communication by Care Providers" (mean 59.2, very low/low trust 11.3%, high/very high trust 52.3%), then "Quality of Cooperation" (mean 56.7, very low/low trust 10.5%, high/very high trust 43.3%), while "Policies of the Healthcare System" has the lowest trust (mean 46.5, very low/low trust 29.5%, high/very high trust 24.6%).

Using individual transformed scores and Pearson's Correlation Coefficient (r) there is a moderate positive correlation between trust in primary care doctors and in the medical profession ($r = 0.60$, $P < 0.001$), a moderate positive correlation between trust in primary care doctors and in the healthcare system ($r = 0.53$, $P < 0.001$), and a strong positive correlation between trust in the medical profession and in the healthcare system ($r = 0.75$, $P < 0.001$).

Discussion

There are limitations to our study. The study was only in Redhill which, together with the sample, had more Chinese and fewer Malays, and more persons of lower socio-economic status than Singapore as a whole. Hence, caution is needed in extrapolating the results to the whole of Singapore.

Also, the sample size is rather small (due to the limited time available) with a moderate response rate. However, the demographic characteristics of the sample are reasonably comparable to those of Redhill, indicating that the sample was sufficiently random and non-response did not have a major effect. Only HDB flats were included; however, as 88.0% of Singaporeans live in HDB flats,[18] this largely represents Singapore's population.

Furthermore, the questionnaires were validated in the US,[3,4] and the Netherlands[7] and could have limitations in the different socio-cultural context of Singapore. As public trust has only recently been studied and with few studies, these are the only questionnaires available and there is none validated in Singapore. However, the questions are straight forward, free of cultural biases and were checked for relevance in the Singaporean context, and the pilot survey showed that respondents were comfortable with the questions.

Using the same questionnaires, for primary care doctors the transformed mean of trust (which ranges from 0 to 100) was lower in Singapore (59.7) by 17.3 than that found in a study in the US (77.0),[3] while conversely for the medical profession the transformed mean of trust in Singapore

Table 2. Means and Proportions % by Categories of Trust Based on Individual Transformed Scores (Range, 0 to 100), for Primary Care Doctors, Medical Profession, Healthcare System, Persons Aged ≥18 Years

	Mean (95% CI)	Very low Score 0-<20 % (95% CI)	Low Score 20-<40 % (95% CI)	Neutral Score 40-<60 % (95% CI)	High Score 60-<80 % (95% CI)	Very high Score 80-100 % (95% CI)	Low/Very low Score 0-<40 % (95% CI)	High/Very high Score 60-100 % (95% CI)
Primary care doctors	59.7 (58.6-60.8)	0.3 (0.1-1.5)	2.5 (1.3-4.7)	40.4 (35.5-45.6)	54.0 (48.9-59.1)	2.8 (1.5-5.0)	2.8 (1.5-5.0)	56.8 (51.6-61.8)
Medical professional	61.8 (60.2-63.4)	1.0 (0.4-2.6)	7.7 (5.5-10.8)	33.7 (29.2-38.5)	47.0 (42.1-52.0)	10.5 (7.9-14.0)	8.7 (6.3- 2.0)	57.6 (52.6-62.4)
Healthcare system	61.5 (60.3-62.8)	0.5 (0.1-1.9)	4.1 (2.5-6.6)	40.0 (35.3-44.9)	48.7 (43.8-53.7)	6.7 (4.6-9.6)	4.6 (2.9-7.2)	55.4 (50.4-60.2)

95% CI: 95% confidence interval

Table 3. Means and Proportions % by Categories of Trust Based on Individual Transformed Scores (Range, 0 to 100), for Areas of the Healthcare System, Persons Aged ≥18 Years

Area of the healthcare system	Mean (95% CI)	Very Low/Low Score 0-<40 % (95% CI)	Neutral Score 40-<60 % (95% CI)	High/Very High Score 60-100 % (95% CI)
Patient focus of providers	60.1 (58.4-61.8)	9.2 (6.7-12.5)	32.1 (27.6-36.8)	58.7 (53.8-63.5)
Policies of the healthcare system	46.5 (44.9-48.1)	29.5 (25.2-34.2)	45.9 (41.0-50.9)	24.6 (20.6-29.1)
Healthcare providers' expertise	64.5 (63.2-65.9)	2.3 (1.2-4.3)	26.9 (22.8-31.5)	70.8 (66.1-75.1)
Quality of care	63.8 (62.4-65.1)	2.6 (1.4-4.7)	35.9 (31.1-40.8)	61.5 (56.6-66.2)
Information supply and communication by care providers	59.2 (57.4-60.9)	11.3 (8.5-14.8)	36.4 (31.8-41.3)	52.3 (47.4-57.2)
Quality of cooperation	56.7 (55.0-58.4)	10.5 (7.8-14.0)	46.2 (41.3-51.1)	43.3 (38.5-48.3)

95% CI: 95% confidence interval

(61.8) was higher by 10.7 than that found in a study in the US (51.1);[4] with P values for both <0.001 (using the one sample t-test).

Our study did not explore the reasons for levels of trust and so explanations for these differences between Singapore and the US are speculative. First, the differences in the healthcare systems and cultural attitudes have to be borne in mind. "Doctor-hopping", which is common in Singapore, may reduce trust in primary care doctors as choice of doctor is one of the determinants of trust.[4,19-21] Trust in the medical profession in the US may have been reduced by high levels of litigation. The Bolam test for medical negligence, which judges a doctor not to be negligent if he acts according to practice accepted by a responsible body of medical opinion, has been phased out in the US but is used in Singapore.

For the healthcare system (transformed mean of trust 61.5), trust levels were highest for "Healthcare Providers' Expertise", then "Quality of Care", then "Patient Focus of Providers", then "Information Supply and Communication by Care Providers", then "Quality of Cooperation", then "Policies of the Healthcare System".

It is heartening to find that low proportions of Singaporeans had low/very low trust, particularly in view of the outbreak of the severe acute respiratory syndrome (SARS) in 2003, when doctors and the healthcare system were put to the test. This outbreak emphasised the need for public trust in doctors and the healthcare system to forge a powerful partnership against health threats.

However, there is cause for concern as quite high proportions took a neutral stand, so that only slightly more than half expressed high/very high trust. This could be due to an apathetic attitude among Singaporeans. However, some persons may have low trust but were reluctant to express this to the medical students. Hence, low trust may be higher than what was reported from this study.

Our study did not explore the reasons for levels of trust. Hence, the impact cannot be gauged of recent media coverage of unethical practices by doctors, such as over-prescription of sleeping pills,[22] testing of drugs in a clinical trial without informed consent, and legal prosecution for tax evasion.[23] This also applies to doctors promoting unproven healthcare products under multi-level marketing (MLM),[24] which the Ministry of Health felt could undermine the doctor-patient relationship which is based on trust.[25]

Perhaps stricter regulation of doctors by the Singapore Medical Council may help to improve trust. While steps are

being made in stressing the importance of communication to medical students, perhaps a component on the doctor-patient relationship can be incorporated into continuing medical education (CME).

There is a need to improve trust in the healthcare system, especially in policies. Increased transparency could help. The Ministry of Health has made headway by mandating declaration of hospital bills on the Internet. As this is the first study on trust in the healthcare system, it is not possible to examine time trends and to gauge the effect of the re-organisation in 1999 of the public healthcare system into 2 vertically integrated networks, National Healthcare Group (NHG) and Singapore Health Services (SingHealth).

It has been postulated that higher trust in the medical profession leads to higher trust in primary care doctors,[4] while primary care doctors play an important role in determining trust in the medical profession and the healthcare system. This interplay was shown in this study by significant and reasonable correlations between trust in primary care doctors and the medical profession, between primary care doctors and the healthcare system, and between the medical profession and the healthcare system.

Trust is constantly changing.[2] Further studies on trust are needed in Singapore, particularly in view of the movement of doctors from the public to the private sector and increasing costs and changes in healthcare financing. These studies should be on larger random samples from the whole of Singapore. Questions should include reasons for trust levels, including some open-ended ones, which allow for a fuller range of opinions and for persons to express their personal experiences. Trust in persons with chronic conditions could be specifically studied, as their trust may be different from the general population due to their continuing contact with medical personnel.

Conclusion

This is the first study and a fundamental step in examining public trust in primary care doctors, the medical profession, and the healthcare system in Singapore. Bearing in mind the study's limitations, it has indicated that while trust levels are reasonable there is room for improvement. Greater trust leads, among other things, to better patient compliance, greater willingness to accept healthcare policies and eventually, a more efficient and cost-effective healthcare system.

Trust should be considered by doctors in their relationships with patients and by policy makers in their decision making. They should recognise that trust is not intangible and difficult to analyse, and that trust can be measured and must be measured. Further questionnaires to refine the measurement of trust are likely to be developed. Only if trust is considered and measured can recommendations be made to improve trust, which will benefit patients, doctors and the healthcare system.

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