Preventive Medicine 82 (2016) 83–91

Contents lists available at ScienceDirect

Preventive Medicine

journal homepage: www.elsevier.com/locate/ypmed

Prostate cancer screening in Switzerland: 20-year trends and socioeconomic disparities

Idris Guessous [a,b,c,*], Stéphane Cullati [a], Stacey A. Fedewa [b,d], Claudine Burton-Jeangros [e], Delphine S. Courvoisier [f], Orly Manor [g], Christine Bouchardy [h]

[a] Unit of population epidemiology, Department of Community Medicine, Primary Care and Emergency Medicine, University Hospitals of Geneva, Geneva, Switzerland
[b] Emory University, Department of Epidemiology, Atlanta, GA, USA
[c] Division of chronic diseases, Institute of Social and Preventive Medicine, Lausanne University Hospital, Lausanne, Switzerland
[d] American Cancer Society, Atlanta, GA, USA
[e] Department of sociology, University of Geneva, Geneva, Switzerland
[f] Division of quality of care, University Hospitals of Geneva, Geneva, Switzerland
[g] School of Public Health and Community Medicine, Hebrew University-Hadassah, Jerusalem, Israel
[h] Geneva Cancer Registry, Global Health Institute, University of Geneva, Geneva, Switzerland

ARTICLE INFO

Available online 12 November 2015

Keywords:
PSA
Trends
Socioeconomic status
Disparities
Switzerland

ABSTRACT

Background. Despite important controversy in its efficacy, prostate cancer (PCa) screening has become widespread. Important socioeconomic screening disparities have been reported. However, trends in PCa screening and social disparities have not been investigated in Switzerland, a high risk country for PCa. We used data from five waves (from 1992-2012) of the population-based Swiss Health Interview Survey to evaluate trends in PCa screening and its association with socioeconomic indicators.

Methods. We used multivariable Poisson regression to estimate prevalence ratios (PR) and 95% Confidence Intervals (CI) adjusting for demographics, health status, and use of healthcare.

Results. The study included 12,034 men aged ≥50 years (mean age: 63.9). Between 1992 and 2012, ever use of PCa screening increased from 55.3% to 70.0% and its use within the last two years from 32.6% to 42.4% (p-value < 0.05). Income, education, and occupational class were independently associated with PCa screening. PCa screening within the last two years was greater in men with the highest (> $6,000/month) vs. lowest income (≤$2,000) (46.5% vs. 38.7% in 2012, PR for overall period = 1.29, 95%CI: 1.13-1.48). These socioeconomic disparities did not significantly change over time.

Conclusions. This study shows that about half of Swiss men had performed at least one PCa screening. Men belonging to high socioeconomic status are clearly more frequently screened than those less favored. Given the uncertainty of the usefulness of PCa screening, men, including those with high socioeconomic status, should be clearly informed about benefits and harms of PCa screening, in particular, the adverse effect of over-diagnosis and of associated over-treatment.

Introduction

Worldwide, more than 1.1 million cases of prostate cancer (PCa) and 307,000 PCa-related deaths were recorded in 2012, accounting for around 8% of all new cancer cases and 15% in men (Ferlay et al., 2015). In order to reduce PCa mortality, periodic PCa screening by prostate-specific antigen (PSA) has been proposed in the mid 1990's. However, because of conflicting evidence that the potential benefits of screening in reducing mortality may not outweigh the harm of over-diagnosis and the over-treatment of such diagnosis (Ilic et al., 2013; Kim and Andriole, 2015), most organizations including the U.S. Preventive Services Task Force currently recommend against PSA-based screening for prostate cancer. Recent guidelines from the European Association of Urology (2013), the American Urological Association (2013) and the American Cancer Society (2010) emphasize informed-decision making for PCa screening (Heidenreich et al., 2014; Ilic et al., 2013; Wolf et al., 2010). Informed-decision making involves patients considering the pros and cons of screening considering the options together with personal values, and making a decision (Bowen et al., 2011). Several studies including studies from the United States and European countries have shown that men or their physicians/urologists

Abbreviations: BMI, Body mass index; CI, Confidence interval; PCa, Prostate cancer; PSA, Prostate specific antigen; PR, Prevalence ratio; RCT, Randomized clinical trial; SES, Socioeconomic status; SRH, Self-rated health; SHIS, Swiss Health Interview Survey.

* Corresponding author at: Unit of population epidemiology, Department of Community Medicine, Primary Care and Emergency Medicine, University Hospitals of Geneva, Switzerland. Fax: +41 223055865.
E-mail address: idris.guessous@hcuge.ch (I. Guessous).

http://dx.doi.org/10.1016/j.ypmed.2015.11.009
0091-7435/

Table 1
Characteristics of the 12,034 men aged 50 years old and older according to the Swiss Health Interview Survey (SHIS) waves (1992 to 2012).

	1992 N = 1371	1997 N = 1353	2002 N = 2846	2007 N = 2764	2012 N = 3700	
Survey participation rates	70.8	68.8	63.9	66.3	53.1	
	N (%)[1]	N (%)[1]	N (%)[1]	N (%)[1]	N (%)[1]	p-Value[2]
Characteristics						
Age (in years)						<0.001
50–59	627(44.5)	532(42.9)	1019(42.8)	950(39.6)	1389(39.6)	
60–69	527(38.7)	452(30.5)	977(30.5)	970(34.1)	1262(32.7)	
70 and older	217(16.9)	369(26.5)	850(26.5)	844(26.4)	1049(27.7)	
Marital status						<0.001
Single	94(3.7)	88(4.2)	250(5.9)	237(5.9)	306(8.5)	
Married and registered partnership	1044(85.6)	1012(83.7)	2037(81.4)	1901(78.2)	2809(72.8)	
Widowed	98(4.7)	123(5.8)	247(5.0)	253(5.4)	188(5.9)	
Divorced, separated, registered partnership dissolved	135(6.0)	130(6.2)	312(7.8)	373(10.4)	397(12.8)	
Education						<0.001
Primary	210(15.0)	194(14.1)	316(11.5)	239(7.6)	397(10.6)	
Secondary	722(52.9)	774(56.6)	1792(63.0)	1526(54.4)	1912(49.9)	
Tertiary	439(32.1)	385(29.3)	738(25.5)	999(38.0)	1391(39.6)	
Household income in $ USD[3]						<0.001
≤2000	382(30.2)	176(12.3)	256(9.7)	225(7.1)	240(6.7)	
2001–4000	531(40.6)	602(46.7)	1224(45.7)	1111(41.1)	1511(40.3)	
4001–6000	284(18.5)	384(28.2)	883(28.5)	802(29.8)	1149(31.5)	
≥6001	174(10.6)	191(12.8)	483(16.0)	626(22.1)	800(21.5)	
Employment status						<0.001
Out of the labor force	573(43.8)	663(46.1)	1516(47.9)	1396(44.6)	1661(43.1)	
Employed/workers	798(56.2)	690(53.9)	1330(52.1)	1368(55.4)	2039(56.9)	
Occupational class (employed/workers only, N = 6225)						0.001
Superior and intermediate professions	349(45.4)	299(43.4)	553(40.7)	623(46.1)	871(43.7)	
Employee, non-manual professions	100(11.2)	73(10.2)	131(9.8)	138(9.9)	193(9.4)	
Independent, artisan	122(14.5)	116(18.0)	285(21.0)	288(19.6)	439(19.8)	
Overseer, qualified worker, skilled worker	227(28.9)	202(28.5)	361(28.6)	319(24.4)	536(27.1)	
Citizenship						<0.001
Swiss	1233(88.1)	1211(87.3)	2598(86.9)	2556(89.5)	3267(86.5)	
Not Swiss	138(11.9)	142(12.7)	248(13.1)	208(10.5)	433(13.5)	
Linguistic area						<0.001
German	964(73.3)	922(75.8)	1985(74.3)	1723(73.7)	2521(73.9)	
French	327(21.3)	331(20.2)	649(21.4)	826(22.1)	900(21.4)	
Italian	80(5.4)	100(4.0)	212(4.3)	215(4.2)	279(4.7)	
Type of urban area of residence						<0.001
Metropolitan	475(35.5)	427(36.1)	793(33.7)	1162(53.2)	1771(52.8)	
Medium size urban	380(26.2)	390(25.0)	838(26.2)	703(22.2)	859(23.4)	
Small size urban	277(22.0)	339(24.1)	667(23.2)	446(11.8)	613(11.7)	
Rural	239(16.3)	197(14.8)	548(17.0)	453(12.8)	457(12.0)	
Health status						
Self-rated health						<0.001
Very bad	10(0.6)	11(1.0)	25(0.9)	16(0.5)	27(0.7)	
Bad	55(3.6)	36(2.3)	96(3.4)	89(2.9)	148(4.0)	
So-so	181(12.6)	168(12.1)	350(12.0)	380(12.2)	673(17.1)	
Good	794(59.0)	807(59.8)	1801(64.5)	1793(66.6)	1774(49.0)	
Very good	331(24.1)	331(24.9)	574(19.1)	486(17.7)	1078(29.2)	
Body mass index						<0.001
Underweight	29(1.9)	30(2.0)	71(2.3)	11(0.5)	20(0.5)	
Normal weight	618(44.7)	558(39.9)	1113(38.4)	1192(43.7)	1399(38.7)	
Overweight	596(44.0)	647(49.8)	1323(47.9)	1251(45.4)	1733(46.4)	
Obesity	128(9.4)	118(8.3)	339(11.4)	310(10.5)	548(14.5)	
Physical symptoms						<0.001
No, a few	640(47.7)	613(47.0)	1413(50.2)	1319(48.3)	2100(56.8)	
Some	431(31.6)	461(33.6)	934(32.3)	919(34.1)	1072(29.1)	
Important	300(20.7)	279(19.3)	499(17.4)	526(17.6)	528(14.2)	
Currently smoking						<0.001
Yes	413(29.5)	373(26.9)	777(28.0)	686(24.4)	826(22.3)	
No	958(70.5)	980(73.1)	2069(72.0)	2078(75.6)	2874(77.7)	
Health services uses						
General practitioner or family doctor visit in the last 12 months						0.004
No	318(24.3)	263(21.1)	556(21.1)	499(19.0)	718(20.0)	
Yes	1053(75.7)	1090(78.9)	2290(78.9)	2265(81.0)	2982(80.0)	
Prostate screening						
Ever screening						<0.001
No	631(44.7)	550(39.9)	1045(37.9)	847(31.2)	1091(30.0)	
Yes	740(55.3)	803(60.1)	1801(62.1)	1917(68.8)	2609(70.0)	
Screening in the last two years						<0.001
No	933(67.4)	886(65.1)	1796(64.0)	1571(57.6)	2080(57.6)	
Yes	438(32.6)	467(34.9)	1050(36.0)	1193(42.4)	1620(42.4)	

Notes to Table 1:
[1] Proportions are weighted.
[2] Pearson chi-square test.
[3] In 1992, 1997 and 2002, 1 CHF = 0.7 USD; in 2007, 1 CHF = 0.8 USD; 2012, 1 CHF = 1.1 USD (source: www.oanda.com).