The time is now: missed opportunities to address patient needs in community clinics in Cape Town, South Africa

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Summary

OBJECTIVE—To investigate the prevalence and correlates of missed opportunities for addressing reproductive and mental health needs during patients' visits to primary healthcare facilities.

METHODS—We selected a random sample of participants from 14 of the 49 clinics in Cape Town's public health sector using stratified, cluster random sampling (*n* = 2618). Participants were screened to identify those at risk for unsafe sexual behaviour and a mental disorder (specifically substance use, depression, anxiety, and suicide). Information pertaining to whether or not respondents were asked about these issues during clinic visits during the previous year was elicited. The rates and correlates of missed opportunities for providing reproductive and mental health interventions were calculated.

RESULTS—The criteria of a strict definition of a missed opportunity for reproductive or mental health care information were fulfilled by 25% of the sample, while 46% met criteria for a looser definition. After adjusting for the effects of other variables in the model, men and Coloured respondents were more likely to have satisfied the definition of a missed opportunity for an intervention, while having completed high school and having children increased the likelihood of receiving an intervention.

CONCLUSION—Consultations with primary healthcare providers in which these issues are not discussed may represent missed opportunities. Persons presenting for routine care can be counselled, screened and, if required, treated. Interventions are needed at the patient, provider, and community levels to increase the opportunities to provide reproductive and mental health care to patients during routine visits.

Keywords

missed opportunities; primary care; South Africa

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Introduction

As in many parts of the world, the public health care system in South Africa is based on the principles of universal primary care. This implies a comprehensive service, which includes the integration of services such as reproductive and mental health care into the primary health care system. Integration aims to improve services in relation to efficiency and quality thereby maximizing use of resources and opportunities (Briggs & Garner 2006). However, according to the global report by the World Health Organization (WHO 2003), there is substantial evidence to suggest that many countries are struggling to implement this programme and are not experiencing the expected results.

Although in South Africa primary care is responsible for providing basic health services to all, many may have needs for services apart from those requested. With only a quarter of South Africans suffering with a psychiatric disorder receiving treatment (Seedat *et al.* 2008) and 10.9% of all South Africans over 2 years old living with HIV in 2008 (HSRC 2008), it is not unreasonable to suggest that many would benefit from sexual health and mental health interventions during their primary healthcare visit. If these needs are not identified by the primary healthcare provider, this constitutes a missed opportunity to provide services. On the other hand, if needs for additional services are identified and addressed on the same clinic visit, higher coverage and more cost-effective service delivery can be achieved.

A number of studies conducted in the developed world have investigated missed opportunities in various aspects of healthcare including: immunizations (Yach *et al.* 1991; Nowalk *et al.* 2004; Turner *et al.* 2009), cancer screening (Reinhold *et al.* 2005), early detection of HIV (Kuo *et al.* 2005; Burns *et al.* 2008), STD and pregnancy counselling (Tao *et al.* 2000), and substance abuse and suicidal behaviour (Frankenfield *et al.* 2000; Weisner & Matzger 2003; Chang *et al.* 2008). The findings of all of these studies conclude that primary healthcare providers are failing to use clinic visits as an opportunity to provide effective preventive and diagnostic services.

The studies that have investigated missed opportunities in South Africa have predominately focussed around the issue of immunization (Yach *et al.* 1991) and reproductive health needs in various populations such as HIV-infected women in antiretroviral therapy programmes (Myer *et al.* 2007), mother to child HIV transmission (Rispel *et al.* 2009), and contraception counselling for youths (Flisher *et al.* 1992). Most of the studies conducted both in South Africa and in more developed countries consider a missed opportunity as simply not having received services. However, Flisher *et al.* (1992) used specific criteria to define missed opportunities for contraception counselling in their study of 225 youths attending community health centres. Results indicated that 8% of the total sample met criteria of a strict definition of missed opportunity for contraception counselling. Additionally, 44% of sexually active adolescents and 44% of non-sexually active adolescents did not receive an intervention, despite indicating that they would have liked one. The only variable that correlated with whether a missed opportunity occurred was having had more than one partner in the previous year.

Very little is known about the extent to which primary healthcare providers address the reproductive and mental health care needs of their patients. Therefore, the purpose of this study is to document the prevalence and correlates of missed opportunities for these health issues in a large, representative sample of patients using the primary care service of the public health system in Cape Town, South Africa.

Methods

Sample

The study employed a multi-stage stratified, clustered sampling design in which we first stratified and sampled clinics, and then patients within clinics. Consistent with other South African research, we stratified the 49 clinics providing primary care in Cape Town by race as defined under apartheid, because of the continuing association with health disparities and socio-economic status (McIntyre *et al.* 2002; Mager 2004). The population served by the public health sector is chiefly Black and Coloured (mainly of mixed African, Asian or European ancestry), and so we stratified clinics into those serving populations 80% or more Coloured; 80% or more Black; and a more diverse population (i.e. serving approximately equal numbers of both). The 'Black' and 'diverse' strata were approximately equal in size, and the 'Coloured' stratum was 1.5 times the size of these. We randomly selected 14 clinics (proportional to the annual number of visits): six from the larger Coloured stratum and four from each of the proportionately smaller others. We recruited for 4 weeks at each clinic, sampling equally all days of clinic operations across clinics.

The study was approved by the institutional review boards of the University of Cape Town, the University of California, San Francisco and Kaiser Permanente's Department of Research. On data collection days, we constructed a log of all patients who registered, along with their age, race, and gender. From this log, we randomly selected patients, except that we sampled every patient aged 18–24 as this age group attends clinics less frequently and is particularly at risk for substance use (Ward *et al.* 2008). The patient log data were also used to construct weights to estimate population-level statistics.

The recruitment rate was 43%; non-response was due primarily to attempts to recruit patients who, when sought by the interviewers, were not available. Of those patients who were not interviewed, 14.9% (525 patients) were not interviewed because the available fieldworkers did not speak their language, they were too ill to be interviewed, or fieldworkers judged them too cognitively impaired to give informed consent. Only 142 (4.0%) refused the interview. In the majority of cases where patients were not interviewed (2866 patients, or 81.5%), these patients left the clinic in the time between having been seen by the physician and a fieldworker's being available to conduct the interview. Depending on physician staffing patterns, some clinics had shorter waiting periods; some also had fewer interview rooms, so that fieldworkers could not always enrol patients in the study before they left the clinic. Because the recruitment rates were primarily related to practical arrangements within the clinics, it is unlikely that there is systematic bias in terms of the variables of interest (or of sample characteristics such as race or gender; for details on recruitment, see Ward *et al.* 2008.) Our weights adjust for differences between the sample and population in the clinics represented.

Procedure

Interviewers recruited patients as they waited for their medical visits. Patients were interviewed in private rooms after they had their medical consultation by a trained research assistant who was matched for gender and language. The following information was elicited during the interview: (i) demographic data; (ii) risk for sexual health, substance abuse, depression/anxiety, and suicide and; (iii) whether they had received any information regarding these health issues at the visit and whether they would have like to have received such information. The questionnaire was developed in English, translated into Afrikaans and isiXhosa, and checked through back-translation into English. After the interview, respondents were given a list of referral resources, and those who had reported risky behaviour were encouraged to seek help.

Measures

Demographic data collected included age (18–24 years of age, *vs*. 25 and older), race (Black *vs*. Coloured (because of small numbers of Asians and Whites they were excluded from the analysis), education (completed high school *vs*. not completed high school), marital status, employment status, and number of children. Additionally, the number of visits to the primary healthcare facility in the previous year was obtained from respondents.

The rates of missed opportunities for reproductive and mental health interventions were calculated according to two sets of criteria as described in Table 1. It should be noted that the criteria comprising Definition 1 are relatively loose and thus give a higher estimate of the rate and are similar to the definitions found in most of the literature on missed opportunities (see, for instance, Turner *et al.* 2009;Kuo *et al.* 2005; and Tao *et al.* 2000). In this definition, a missed opportunity has occurred when a respondent is established to have risk in a particular health area, but was not asked about that area during the health visit. Conversely, the criteria comprising Definition 2 are based on Flisher *et al.* (1992) and are extremely strict and would give a lower estimate of the rate of missing opportunity. For Definition 2, to determine if a missed opportunity occurred, criteria for definition 1 must be met, and in addition, the respondent must indicate whether s/he wanted information about this health area.

Risky sexual behaviour was determined by whether or not the participant had ever had sexual intercourse, failed to use something to prevent pregnancy or disease and met criteria for one or more of the following: (i) any of his/her sexual partners in the last year traded sex for money or material goods (e.g. alcohol, drugs, food; (ii) s/he did not know his/her own HIV status; (iii) any of his/her sexual partners in the last year had been men who had had sex with other men; (iv) any of his/her sexual partners in the last year had had an STI; (v) last time s/he had sex they had not known their partner longer than 7 days; (vi) s/he reported that their sexual activities over the last year had been risky in terms of AIDS.

We used the ASSIST (Alcohol, Smoking, and Substance Involvement Screening Test; WHO ASSIST Working Group 2002) to assess prevalence of problematic substance use. Specific scores were calculated for each substance where use was reported in the prior 3 months. These can be categorized as low- (including zero), medium-, and high-risk use (except for tobacco use, which can only be categorized high or low risk). Medium risk indicates problematic use, whereas high risk indicates high probability of dependence (Henry-Edwards *et al.* 2003). We dichotomized the risk category at the threshold of hazardous risk so that medium and high risks were coded '1' and low and no risk were coded '0.'

To screen for anxiety and depression, we asked two questions for each from the Patient Health Questionnaire (Spitzer *et al.* 1999). If respondents agreed to both questions either for depression or anxiety they were considered at risk. Suicide risk was measured by three questions focussing on suicide ideation, attempted suicide, and whether or not the respondents received medical care for suicide attempts. If respondents agreed to any one of the three questions, they were considered at risk.

Additionally, whether or not the respondent had been asked about or wanted information about their reproductive or mental health (referred to as an intervention) was elicited. For example, the following question was asked about depression and anxiety, 'In any of your visits in the last 12 months, did a doctor or nurse ask you about your feelings – such as sadness or worrying' to determine whether or not the respondent received an intervention. The interviewer also asked whether or not they wanted advice about these feelings.

Analysis

Data were analysed using SPSS Version 17.0. All analyses were weighted to adjust for clustering, the over-quota of 18- to 24- year-olds, differential non-response rates (by gender, age, and race) within clinics and the size of clinics proportional to the full population served by Cape Town's Community Health Centres. Weights ranged from 0.02 to 12.1 (median = 0.34; inter-quartile range = 0.14–0.72). We examined the unadjusted associations between missed opportunities (according to definition 1-the looser definition) as the dependent variable, and participant demographic characteristics as independent variables. Statistical significance was based on 2-sided tests and set at α = 0.05. In addition, multivariate logistic models were developed to control for demographics and socioeconomic variables (including gender, age, race, marital status, number of children, employment, and education). The first model was based on whether any missed opportunity occurred, while the remaining four models investigated missed opportunities for sexual health, substance use, depression/anxiety, and suicide interventions separately. The results of the regression models were reported as odds ratios (ORs) with 95% confidence intervals (CIs).

Results

A total of 2618 individuals (948 of whom were men and 1670 were women) were recruited as they waited for their medical visit. The weighted sample consisted of a majority of Black respondents (60%), followed by Coloured (39%), with few Whites (1%) or Indians (<1%). Only 9% were <25 years old, nearly half were married (45%) and 10% had less than a high school education. Twenty-nine per cent were employed, and 17% had children.

The criteria for the strict definition of a missed opportunity for any intervention were fulfilled by 25% of the total sample and by 46% for the looser definition (Table 2). The most frequent missed opportunity, according to the looser definition, was for depression/anxiety (28%), followed by sexual and reproductive health (15%), substance use (8%), and suicide (7%) interventions. When including whether or not the respondent wanted to be asked about particular health behaviours in the strict definition, sexual health (14%) was the most frequently reported missed opportunity, followed by depression/anxiety (8%), substance use (3%), and suicide (3%). Twenty-nine per cent of the sample were asked about their substance use, 18% about their sexual and reproductive health, 8% about depression/anxiety, and 1% about suicide. This is despite 36% of the respondents being at risk for depression/anxiety, and only 14% of respondents being at risk for substance abuse.

The unadjusted and adjusted effects of participant demographic characteristics on missed opportunities are presented in Tables 3 and 4. After adjusting for the effects of other variables in the model, men were more likely to have satisfied the definition of a missed opportunity for an intervention than women (OR = 1.25, 95% CI 1.04–1.49). Specifically, men were more likely to meet criteria for a missed opportunity for a reproductive health and substance use intervention (OR = 1.71, 95% CI 1.34–2.81). However, being male increased the likelihood of receiving a depression/anxiety and suicide intervention (OR = 0.56, 95% CI 0.39–0.80). Coloured respondents were more likely to meet the criteria for a missed opportunity than Black respondents (OR = 1.42, 95% CI 1.19–1.69). However, this appears to have been because of the higher rate of missed opportunities for depression/anxiety and suicide interventions among Coloured respondents (OR = 1.56, 95% CI 1.14–1.15). Employed respondents were more likely to have satisfied the definition of a missed opportunity for a suicide intervention (OR = 1.52, 95% CI 1.08–2.14).

Having completed high school increased the likelihood of receiving an intervention (OR = 0.72, 95% CI 0.53–0.97). However, looking at the specific health issues, this was only the case for depression/anxiety (OR = 0.44, 95% CI 0.30–0.65) and suicide interventions, and not for

substance use or reproductive health interventions (OR = 1.78, 95% CI 1.24–2.52). Married respondents were more likely to have satisfied the definition of a missed opportunity for a reproductive health (OR = 3.48, 95% CI 2.87–4.23), substance use, and depression/anxiety (OR = 1.32, 95% CI 1.09–1.60) interventions than single respondents. Having children increased the likelihood of receiving an intervention (OR = 0.40, 95% CI 0.31–0.58), specifically for reproductive health, substance use (OR = 0.42, 95% CI 0.31–0.58) and suicide interventions than respondents with no children. The number of clinic visits in the past year increased the likelihood of receiving an intervention (OR = 0.97, 95% CI 0.96–0.99), specifically for reproductive health (OR = 0.94, 95% CI 0.92–0.97) and substance use, but increased the likelihood of meeting criteria for a missed opportunity for a suicide intervention (OR = 1.03, 95% CI 1.0–1.06).

Discussion

This study had a number of important findings. The criteria for a strict definition of a missed opportunity for reproductive or mental health care information were fulfilled by 25% of the sample, while 46% met criteria for the looser definition. While issues related to substance use and to a lesser extent reproductive health are relatively well addressed, depression, anxiety, and suicide appear to be neglected. A number of socio-demographic variables predicted the presence of a missed opportunity in primary care, and these varied by intervention type.

Discouragingly, the results of this study reveal that many South Africans who may benefit substantially from reproductive and mental health interventions are not receiving these services in primary care. A series of obstacles has been reported to limit the full implementation of primary health care today. These include the HIV/AIDS epidemic, health worker shortages, and inequalities in resource distribution, shortcomings of political, public sector, and medical/health leadership (Kautzky & Tollman 2009). Although these issues are also relevant to the finding of this study, these findings also point to obstacles at the patient and provider levels.

Looking at the specific healthcare issues, health care providers are frequently conducting interventions on substance use. Only 8% of participants met criteria for a missed opportunity for substance use, with 29% of all respondents having received a substance use intervention, despite only 14% being at risk for substance use and 11% actually wanting to receive an intervention. Recent data from a nationally representative sample indicate high lifetime prevalence (13.3%) and early onset (21 years) of substance use disorders (Stein *et al.* 2008). However, because of the timing of this study, the more recent epidemic in methamphetamine (MA) use is not reflected in our data. Because South Africa has experienced a startling increase in methamphetamine use which has occurred against a national background of increased drug use, including other stimulants such as cocaine and methcathinone (Morris & Parry 2006), this may not be such a negative finding.

Particularly striking was the finding that many South Africans met the criteria of a missed opportunity for a depression/anxiety (55%) and suicide interventions (7%). Although there are no comparable data investigating missed opportunities for psychiatric disorders in South Africa, in the United States only 23% of 328 physicians interviewed reported regularly screening their patients for suicide risk factors (Frankenfield *et al.* 2000). Similar to more developed countries, in South Africa, the major risk factor for suicidal behaviour is the presence of a psychiatric disorder. According to results for a nationally representative survey in South Africa, 61% of people who seriously considered killing themselves at some point in their lifetime reported having a prior DSM-IV disorder. The disorders with the strongest association with suicide attempts were PTSD, followed by panic disorder and social phobia (Khasakhala *et al.* in press). At least one study (also in a Cape Town primary care setting) found that 94%

of the patients reported exposure to traumatic events, and of these patients, 19.9% reported PTSD and 37% reported depression (Carey *et al.* 2003).

A number of barriers to screening for psychiatric disorders are described in the literature. Reasons for this may include high case-loads, and a general lack of service provider awareness of the impact of mental disorders on patient well-being. Specifically in South Africa, Dirwayi (2002) interviewed 87 nurses in primary care to determine their knowledge of mental health (mental health literacy). Results indicated that nurses fail to recognize psychiatric disorders such as depression and anxiety. Resource constraints have meant that these providers have come to resent service integration, which they perceive as an added burden to their work load. Equipping primary healthcare providers in mental health matters, referrals can be facilitated by enabling lay counsellors or patient advocates to conduct standardized mental health screening. Patients who screen positive may then be assessed by nurses or doctors, and finally referred to mental health services if required. It is urgent that appropriate protocols be developed to address this, and that these protocols are endorsed at the highest levels.

Given the emphasis that has been placed on sexual and reproductive health in South Africa over the last few years, it is not surprising that the rate of missed opportunities was only 15%, irrespective of which definition was used. Although the frequency of missed opportunities for reproductive health interventions is also revealed in previous studies investigating service delivery (Myer *et al.* 2007), the impact of this finding remains distressing. For example, out of 242 women receiving antenatal care in KwaZulu-Natal, South Africa, a majority reported that their pregnancies were unplanned (84%) (Rochat *et al.* 2006). It becomes imperative to address all missed opportunities in the area of sexual and reproductive health. All South Africans visiting primary healthcare facilities should routinely be offered reproductive and sexual health care counselling.

The results of this study reveal that a number of sociodemographic variables predicted the presence of a missed opportunity in primary care, and these varied by intervention type. With the subtle changes in predictors when looking at the specific disorders, it appears that health care providers, broadly guided by perception of morbidity patterns or by their own stereotypes, may target discussions of reproductive and mental health care issues to patients they believe to be at greater risk. Targeting discussions to specific individuals may miss a significant numbers of patients that could benefit from treatment, information, and counselling.

Several limitations of this study must be considered when interpreting its findings. First, these data are based on self-report and are therefore subject to the limitations of self-report bias. Second, the cross-sectional nature of the study does not allow us to address causal relationships. Also, a large number of patients were missed. However, this was most likely caused by factors related to the clinic's ability to process patients and not to the variables under study, and so is unlikely to have introduced any systematic bias (Ward *et al.* 2008). Finally, the quality of interventions was not investigated in this study; therefore, we are unable to determine whether the interventions provided were in fact effective.

However, despite these limitations, it is clear that there is a high prevalence of missed opportunities in primary care clinics in the public health systems in South Africa, particularly concerning depression and anxiety interventions. Starfield (1994) has noted that the process of primary care is as important as the necessary physical and human resources. This includes the practice of 'essential elements of primary care' such as continuity of care, comprehensive care, and accountability, to achieve cost-effective and quality care. These could be considered key precursors to the practice of opportunistic screening in primary care consultations being addressed in this paper. Determining the extent to which these principles are being practised

as well presence of the necessary infrastructure for such practice may be an important area of research.

Acknowledgments

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Table 1

Definitions of missed opportunities for (a) sexual health counselling and (b) mental health intervention

(a)

Definition 1: A missed opportunity is defined to exist for a particular respondent if all of the following are fulfilled:

   S/he has had sexual intercourse

   S/he did not use any contraception on the last occasion that that intercourse took place

   Met criteria for one or more of the following:

      S/he had more than 2 partners in the last year

      Any of their sexual partners in the last year traded sex for material goods (e.g. Alcohol, drugs, food)

      Any of his/her sexual partners in the last year have been men who have had sex with other men

      Any of his/her sexual partners in the last year had an STI

      Last time he/she had sex they had not known their partner longer than 7 days

      He/she reported that they sexual activities over the last year had been risky in terms of AIDS

      Did no know their own HIV status

   In any of their visits to the clinic this year, the doctor or nurse did not ask about their sexual health

Definition 2: A missed opportunity is defined to exist for a particular respondent if all the following conditions are fulfilled:

   S/he met criteria for a missed opportunity described by definition 1

   S/he indicated that s/he would have liked to have received intervention regarding sexual health

(b)

Definition 1: A missed opportunity is defined to exist for a particular respondent if all the following conditions are fulfilled:

   S/he was at risk for a mental disorder (depression/anxiety/substance abuse/suicide)

   In any of their visits to the clinic this year, the doctor or nurse did not ask about their mental health (specifically substance use, depression/anxiety, and suicide)

Definition 2: A missed opportunity is defined to exist for a particular respondent if all the following conditions are fulfilled:

   S/he met criteria for a missed opportunity described by definition 1

   S/he indicated that s/he would have liked to have received intervention regarding mental health

Table 2

Proportion of respondents at risk, who wanted, who received interventions ($N = 2618$)

	Any intervention	Sexual health	Substance abuse	Depression/anxiety	Suicide
At risk	52.7 (1329)	14.8 (377)	14.4 (372)	36.4 (925)	8.4 (220)
Wanted intervention	37.4 (915)	20.2 (529)	11.4 (283)	18.6 (454)	4.9 (12)
Received intervention	44.2 (1040)	17.9 (468)	28.7 (692)	8.0 (185)	1.3 (33)
Missed opportunity definition #1	45.7 (1129)	14.6 (374)	7.7 (196)	28.4 (701)	7.1 (186)
Missed opportunity definition #2	24.5 (613)	13.8 (360)	2.7 (68)	8.2 (204)	2.5 (66)

Table 3

Unadjusted and adjusted associations between missed opportunities and demographic characteristics Any missed opportunity Missed opportunity for sexual health

	Any missed opportunity				Missed opportunity for sexual health			
	Yes (%)(n = 1129)	No (%)(n = 1342)	Unadjusted OR (95% CI)	Adjusted OR (95% CI)	Yes (%)(n = 374)	No (%)(n = 2185)	Unadjusted OR (95% CI)	Adjusted OR (95% CI)
Age								
18–24	9.4	7.5	1.0	1.0	10.4	8.5	1.0	1.0
24+	90.6	92.5	0.79 (0.59–1.05)	1.27 (0.91–1.77)	89.6	91.5	0.79 (0.55–1.15)	1.38 (0.90–2.12)
Sex								
Female	59.9	66.6	1.0	1.0	52.0	66.3	1.0	1.0
Male	40.1	33.4	1.34 (1.14–1.58)	1.25 (1.04–1.49)*	48.0	33.7	1.82 (1.46–2.27)	1.71 (1.34–2.81)*
Race								
Black	56.6	61.7	1.0	1.0	61.8	59.4	1.0	1.0
Coloured	43.4	38.3	1.23 (1.05–1.45)	1.42 (1.19–1.69)*	38.2	40.6	0.90 (0.72–1.14)	1.10 (0.85–1.42)
Education								
Not completed high school	89.9	90.3	1.0	1.0	83.0	91.4	1.0	1.0
Completed high school	10.1	9.7	1.04 (0.80–1.36)	0.72 (0.53–0.97)*	17.0	8.6	2.17 (1.60–2.96)	1.78 (1.24–2.52)*
Married								
No	53.6	56.2	1.0	1.0	47.0	56.6	1.0	1.0
Yes	46.4	43.8	1.11 (0.95–1.30)	1.15 (0.96–1.37)	53.0	43.4	1.47 (1.18–1.84)	1.63 (1.26–2.12)*
Children								
No	23.1	12.9	1.0	1.0	28.8	15.1	1.0	1.0
Yes	76.9	87.1	0.50 (0.40–0.61)	0.40 (0.31–0.52)*	71.2	83.6	4.45 (0.35–0.58)	0.42 (0.31–0.58)*
Employment								
Unemployed	68.1	72	1.0	1.0	66.3	71.5	1.0	1.0
Employed	31.9	28	1.20 (1.01–1.43)	1.03 (0.85–1.25)	33.7	28.5	1.27 (1.01–1.61)	0.83 (0.63–1.08)
Clinic visits (#)			0.97 (0.96–0.98)	0.97 (0.96–0.99)*			0.94 (0.92–0.96)	0.94 (0.92–0.97)*

*
Statistically significant difference at $P < 0.05$.

Table 4

Unadjusted and adjusted associations between missed opportunities and demographic characteristics

	Missed opportunity for substance abuse				Missed opportunity for depression/anxiety				Missed opportunity for suicide			
	Yes (%) (n = 374)	No (%) (n = 2185)	Unadjusted OR (95% CI)	Adjusted OR (95% CI)	Yes (%) (n = 701)	No (%) (n = 1770)	Unadjusted OR (95% CI)	Adjusted OR (95% CI)	Yes (%) (n = 186)	No (%) (n = 2422)	Unadjusted OR (95% CI)	Adjusted OR (95% CI)
Age												
18–24	10.4	8.5	1.0	1.0	8.5	8.5	1.0	1.0	12.0	8.4	1.0	1.0
25+	89.6	91.5	0.79 (0.55–1.15)	1.38 (0.90–2.12)	91.5	91.5	0.99 (0.73–1.36)	0.87 (0.60–1.25)	88.0	91.6	0.68 (0.42–1.08)	0.83 (0.49–1.42)
Sex												
Female	52.0	66.3	1.0	1.0	67.2	61.5	1.0	1.0	72.2	63.3	1.0	1.0
Male	48.0	33.7	1.82 (1.46–2.27)	1.71 (1.34–2.81)*	32.8	38.5	0.78 (0.65–0.94)	0.68 (0.56–0.83)*	27.8	36.7	0.67 (0.48–0.93)	0.56 (0.39–0.80)*
Race												
Black	61.8	59.4	1.0	1.0	51.9	62.6	1.0	1.0	49.3	61.1	1.0	1.0
Coloured	38.2	40.6	0.90 (0.72–1.14)	1.10 (0.85–1.42)	48.1	37.4	1.55 (1.30–1.86)	1.39 (1.15–1.68)*	50.7	38.9	1.62 (1.20–2.18)	1.56 (1.14–2.15)*
Education												
Not completed high school	83.0	91.4	1.0	1.0	69.9	88.9	1.0	1.0	92.4	90.1	1.0	1.0
Completed high school	17.0	8.6	2.17 (1.60–2.96)*	1.78 (1.24–2.52)*	30.1	11.1	0.52 (0.3–0.73)	0.44 (0.30–0.65)*	7.6	9.9	0.75 (0.43–1.31)	0.49 (0.26–0.92)*
Married												
No	47.0	56.6	1.0	1.0	50.2	56.8	1.0	1.0	58.4	55.4	1.0	1.0
Yes	53.0	43.4	1.47 (1.18–1.84)	1.63 (1.26–2.12)*	49.8	43.2	1.30 (1.09–1.55)	1.32 (1.09–1.60)*	41.6	44.6	0.88 (0.65–1.20)	0.98 (0.71–1.37)
Children												
No	28.8	15.1	1.0	1.0	15.6	17.4	1.0	1.0	25.2	16.7	1.0	1.0
Yes	71.2	83.6	4.45 (0.35–0.58)	0.42 (0.31–0.58)*	84.4	82.6	0.27 (0.90–1.45)	0.87 (0.65–1.16)	74.8	83.3	0.60 (0.42–0.85)	0.43 (0.28–0.66)*
Employment												
Unemployed	66.3	71.5	1.0	1.0	69.9	69.9	1.0	1.0	66.8	71.0	1.0	1.0
Employed	33.7	28.5	1.27 (1.01–1.61)	0.83 (0.63–1.08)	30.1	30.1	1.00 (0.83–1.21)	1.03 (0.84–1.28)	33.2	29.0	1.22 (0.89–1.67)	1.52 (1.08–2.14)*
Clinic visits (#)			0.94 (0.92–0.96)	0.94 (0.92–0.97)*	na	na	1.0 (0.99–1.01)	0.99 (0.98–1.01)	na	na	1.01 (1.0–1.04)	1.03 (1.0–1.06)*

*
Statistically significant difference at $P < 0.05$.