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Acceptability and Receipt of Preventive Care for Chronic-Disease Health Risk Behaviors Reported by Clients of Community Mental Health Services

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Abstract

Background: Relative to the general population, people with a mental illness have a greater prevalence of health risk behaviours which contribute to higher chronic disease rates. The provision of preventive care to address such behaviours is recommended by mental health clinical guidelines; however little information is available regarding client acceptability or the prevalence of such care in mental health services. This study describes mental health service client reported acceptability and receipt of assessment, advice and referral for smoking, inadequate fruit and vegetable consumption, harmful alcohol consumption and physical inactivity. The association between preventive care provision, diagnosis and number of clinical appointments was examined.

Methods: A cross-sectional telephone interview was undertaken with clients (n=558) of community-based mental health services in Australia.

Results: Despite preventive care being highly acceptable to clients (86% - 97%), client receipt of preventive care was low. Client receipt of risk assessment ranged from 26% (fruit and/or vegetable intake) to 76% (alcohol consumption) of clients. The proportion of clients who were at-risk and assessed who received brief advice ranged from 69% (inadequate fruit and/or vegetable intake) to 85% (physical inactivity), while 38% (harmful alcohol consumption) to 49% (smoking) received any referral. A greater number of appointments was associated with a higher prevalence of preventive care receipt, as was diagnosis of diabetes or respiratory conditions; and not being diagnosed with schizophrenia.

Conclusions: Additional practice change strategies are required to increase the delivery of routine preventive care within mental health services if clients are to benefit from clinical guidelines.

Background

People with a mental illness have higher rates of chronic disease morbidity and mortality and a reduced life expectancy compared to the general population (1-3). Whilst the causes underlying such disparities are varied (4-7), a greater prevalence of modifiable health risk behaviours such as smoking (8, 9), harmful alcohol consumption (10), inadequate nutrition (11, 12), and physical inactivity (13, 14) is a significant contributor. Mental health care guidelines recommend the provision of preventive care to modify such client risk behaviours (9, 15, 16). Such care has been recommended to include the ‘2As and R model’ as a minimum; assessment of clients’ health risk behaviours, and for clients with risks, the provision of advice and referral to behaviour change services (17-20).

Limited research has examined the provision of preventive care for chronic disease health risk behaviours by mental health services, with such research predominantly focusing on smoking cessation care (21-26). Four identified studies within the past decade have examined the provision of care for more than one of these health risk behaviours (27-30). However, most have been limited to examining a single element of preventive care (27, 29). One study was located that addressed the provision of three elements of preventive care across four behaviours (smoking, harmful alcohol consumption, inadequate nutrition, and physical inactivity) (30). The study, which surveyed clinical staff within Australian community mental health services found that the proportion of clinicians who reported providing care to the majority ($\geq 80\%$) of their clients for each of the four behaviours ranged from 13% to 89% for assessment, 46% to 80% for advice, and 23% to 61% for any type of referral. Care provision was consistently lowest for nutrition and, for all behaviours, referral or follow-up was least likely to be provided (30). An important limitation of studies that have examined the provision of preventive care to address a range of health risk behaviours in

mental health services over the last decade is their use of either staff report (28-30) or medical record audit (27). No studies, to our knowledge, have utilised client-reported receipt of preventive care despite this being suggested as a more appropriate measure (31).

Previous research undertaken in the mental health setting has identified a number of clinical and client characteristics are associated with greater provision of preventive care including: rural as opposed to urban location (32, 33); a consultation of longer duration (32); being seen by a nurse or allied health clinician as opposed to a psychiatrist (32); diagnoses of diabetes, hypertension, obesity (32, 33), asthma or other respiratory disorders (24); and psychiatric diagnoses including bipolar disorder (33), and some substance use disorders (24).

A growing body of evidence suggests that mental health service clients are interested in improving their health risk behaviours (34-40), and suggests that mental health clients are receptive to smoking cessation care (41) and care to increase physical activity (34). However, client acceptability towards preventive care for alcohol consumption or inadequate nutrition, or specific elements of preventive care has not been investigated. In the context of mental health clinicians perceiving that lack of client acceptability constitutes a barrier to their provision of preventive care (42-44), there is a need for more research to examine client acceptability across a broader set of risk behaviours and elements of preventive care.

A study was undertaken within a network of Australian community mental health services to examine: a) client reported acceptability of receiving assessment, brief advice and referral/follow-up from community mental health clinicians for each of four health risk behaviours; b) client reported receipt of such forms of care for each of the four behaviours;

and c) associations between client diagnosis and number of clinical appointments, and reported receipt of preventive care addressing multiple chronic disease health risk behaviours.

Methods

Design

A cross-sectional survey of community mental health service clients was undertaken (December 2011 to November 2012 inclusive) in one local health district in New South Wales, Australia. Since 2010, the district has had a policy requiring community mental health clinicians to provide routine preventive care to all clients for the four behavioural risks following the 2As and R model. At the time of the study, no specific training regarding the policy had been provided to clinicians (45).

Ethical approval was obtained from the Hunter New England Human Research Ethics Committee (approval No. 09/06/17/4.03) and the University of Newcastle Human Research Ethics Committee (approval No. H-2010-1116).

Participants and recruitment

Community mental health services

In Australia, public community mental health services provide ambulatory care to approximately 350,000 clients each year (46). Within the study area, all 12 community-based mental health services providing care to adult clients were invited to participate. Such services receive over 7,000 new clients per annum, and provide general adult mental health care, and care to more specialised populations including older persons, psychiatric rehabilitation, early diagnosis, comorbid substance use, eating disorders and borderline personality disorder.

Community mental health clients

Clients attending any of the 12 eligible services were initially eligible if, based on electronic medical record data, they: were at least 18 years of age, had attended at least one face-to-face appointment at an eligible service during the previous two weeks, had not previously been selected to participate, and had not been identified by their clinician as inappropriate to contact.

Over 12 months, a random sample of approximately 22 such clients (approximately 5% of weekly eligible clients) was selected weekly from the electronic medical records system using the survey select procedure in SAS V9.3. Selected clients were mailed an information letter and telephoned by trained interviewers to further determine eligibility including: English speaking, not living in an aged care facility or gaol, and being physically and mentally capable of responding to the survey items. Eligible consenting clients completed a computer assisted telephone interview survey at that time or another suitable time.

Measures:

Client descriptors: Clients reported their: Aboriginality, highest education level, employment status, marital status, and psychiatric or other medical conditions for which they had received medical attention or taken medication within the previous two months. Age, gender, postcode, service attended, and number of community mental health appointments within the last 12 months were obtained from electronic medical records for consenters and non-consenters.

Client health risk behaviours: Clients reported the following during the month prior to seeing their community mental health clinician: tobacco smoking (47); quantity and frequency of alcohol use (48); fruit and vegetable consumption (49); and physical activity (50). Survey items are based on validated items from recommended assessment tools (51-54) and have been used previously in community surveys (55). Clients' risk status was based on Australian national guidelines (47-50)(Table 1).

Acceptability of preventive care: Clients were asked to indicate the acceptability of clinician assessment for each behaviour (strongly disagree to strongly agree). For example, "it is acceptable for 'service' to ask you if you smoke any tobacco products". Clients who were identified to be at-risk for one or more behaviours were asked to similarly indicate the acceptability of clinicians providing brief advice, and referral for such behaviours.

Receipt of preventive care:

Client receipt of assessment, brief advice, and referral/follow-up was assessed (yes, no, don't know) (17-20). Clients were asked to report whether, during their community mental health appointments, the clinician assessed their smoking status, alcohol consumption, fruit and vegetable intake, and physical activity. Clients classified as at-risk and who reported having received assessment for that behaviour, were asked whether their clinician advised them to modify their behaviour. Clients classified as at risk and who reported having received assessment for that behaviour, were asked whether their clinician: spoke to them about or offered to arrange referral to the NSW Quitline (for smoking; www.icanquit.com.au/further-resources/quitline), or the NSW Get Healthy Coaching and Information Service (for inadequate fruit and/or vegetable intake or physical inactivity; www.gethealthynsw.com.au). No equivalent free, government funded telephone helpline was available for reducing alcohol

consumption. Such clients were further asked whether they were advised to see their general practitioner or Aboriginal Medical Service (AMS), or other services (e.g. dietician, support groups, Alcoholics Anonymous).

Analyses

Analyses were undertaken with SAS V9.3. Descriptive statistics were used to describe the sample characteristics and client acceptability of each element of care for each health risk behaviour. Residential postcode was used to calculate each client's geographic remoteness (56) and socio-economic index of disadvantage (57). Condensed response categories were created for: age, marital status, highest education level, geographic remoteness, index of disadvantage, and number of appointments in the previous 12 months (Table 1). Chi-squared analysis was used to compare consenters and non-consenters for age, gender, remoteness and number of appointments.

For each behaviour a variable was created to reflect whether at-risk clients received any type of referral/follow-up. For clients who reported being at-risk and being assessed, a 'complete care' variable was created for receipt of both advice and referral/follow-up for each behaviour (yes, no).

Descriptive statistics were used to describe client receipt of assessment (yes versus no, don't know) for each behaviour, and to describe client receipt of advice, each type of referral, and 'complete care' for each behaviour for which a client was at-risk and reported being assessed.

For each of the four behaviours, chi-squared analysis was used to examine the association between client diagnostic characteristics and the number of appointments in the past 12 months, with receipt of assessment and with ‘complete care’. Variables associated at $p \leq .25$ were entered into backward stepwise logistic regression models to examine their association with having received assessment, and having received ‘complete care’ for each of the four behaviours (supplementary Table 1). The choice of this p -value follows recommendations that more traditional levels of $p < .05$ often fail to identify important and clinically relevant variables (58). Logistic regression models adjusted for age, gender, employment status, marital status, education, Aboriginality and remoteness, in order to examine whether care receipt was independently associated with diagnostic characteristics and the number of appointments in the past 12 months.

Results

Participants

All 12 services participated. Of 1106 clients selected to participate, 903 (82%) were contactable, with 129 (14%) of these identified as ineligible for participation. Of the remaining 774 clients, 558 (72%) participated in the interview. Female clients were more likely to participate than males (76% vs 68%, $p = .009$). There were no other significant differences between consenters and non-consenters. Client descriptors are reported in Table 1.

Acceptability of receiving preventive care

Clients consistently reported that preventive care provision was highly acceptable (Table 2). Acceptability of assessment ranged from 90% for fruit and/or vegetable consumption to 97% for alcohol consumption; acceptability of receiving advice ranged from

86% for smoking to 94% for physical inactivity; and acceptability of receiving referral ranged from 88% for inadequate fruit and/or vegetable consumption to 91% for harmful alcohol consumption.

Receipt of preventive care

Assessment

The majority of participants reported being assessed for smoking (73%) and alcohol consumption (76%). Over half were assessed for physical activity (57%), and a quarter for fruit and/or vegetable intake (26%) (Table 3).

Advice

Of those participants who were at-risk and reported receiving assessment, a majority received brief advice to quit smoking (79%), reduce their alcohol consumption (73%), increase their fruit and/or vegetable consumption (69%), and increase their physical activity (85%) (Table 3).

Referral/Follow-up

Receipt of each type of referral/follow-up was low. Being spoken to about telephone helplines ranged from 12% (physical inactivity) to 41% (smoking), whilst receiving an offer to arrange a referral to a helpline ranged from 1% (fruit and/or vegetable consumption) to 7% (smoking). Receipt of advice to speak to their general practitioner or AMS ranged from 2% (fruit and/or vegetable consumption) to 13% (smoking), and being advised to use any other type of support ranged from 29% (smoking) to 46% (physical inactivity) (Table 3).

Complete care

For each of the four risk behaviours less than half of those participants who were at-risk and reported being assessed received both advice, and any referral/follow-up, ranging from 37% (harmful alcohol consumption) to 48% (smoking).

Associations with receipt of preventive care

Participants were less likely to receive assessment for alcohol consumption if they had a diagnosis of schizophrenia (OR .63). Clients were more likely to receive assessment for physical activity if they had a greater number of appointments in the past 12 months (3 to 11, or more than 12 appointments; OR 2.4 and 3.1 respectively). No significant associations were identified for assessment of smoking or fruit and/or vegetable consumption (Table 4).

Receipt of complete care was more likely for smoking when 3 to 11, or more than 12 appointments occurred in the past 12 months (OR=2.3 and 2.9 respectively). Complete care for alcohol was more likely when a client had more than 12 appointments in the past 12 months (OR=3.2), and less likely if diagnosed with schizophrenia (OR=.21). Complete care for inadequate fruit and/or vegetable consumption was more likely when participants had diabetes or a respiratory condition (OR=4.2 and 3.3 respectively). Complete care for physical inactivity was more likely when a participant had diabetes (OR=4.6) (Table 4).

Discussion

This study is the first to examine mental health client reported acceptability and receipt of preventive care across multiple health behaviour risks. Preventive care was highly acceptable to clients across all behaviours and care elements. Receipt of preventive care was variable across behaviours and care elements, and was particularly low for inadequate fruit and/or vegetable consumption, receipt of referral/follow-up, and receipt of complete care. Factors identified as being positively associated with preventive care receipt were a greater

number of appointments in the previous 12 months, a diagnosis of diabetes or a respiratory condition, and not having a diagnosis of schizophrenia.

The finding that the receipt of assessment, advice and referral for all risk behaviours was highly acceptable to clients is consistent with research regarding smoking and physical activity (34, 41) and extends previous findings to include acceptability for alcohol and nutrition, and for referral. Such findings also extend on research identifying that a significant proportion of mental health service clients are interested in changing their health risk behaviours (34-40); suggesting that clinician beliefs regarding client non-receptivity to physical health care (42, 43, 59) may be unfounded. The dissemination of training and educational resources has been reported to positively impact primary care nurses' misconceptions regarding physical health care for clients with a mental illness (60). The effectiveness of such strategies in reducing clinician misconceptions regarding client receptivity of preventive care and the impact on clinician provision of such care should be examined.

Despite high levels of acceptability, care receipt was low. The results are consistent with clinician reports of sub-optimal preventive care provision, where care was particularly low for inadequate fruit and/or vegetable consumption, and referral across all behaviours (30). For each of the four behaviours, of those participants who were at-risk and reported receiving assessment, less than half were advised to use any type of referral/follow-up. Along with a perception that clients may not be receptive or interested, the low levels of referral may reflect poor communication between mental health and other health services (61, 62), a perceived lack of referral options (43, 61, 63, 64) or other organisational barriers. Further

research is warranted to better understand the barriers to care provision in this setting, in order to develop interventions to improve care.

For some behaviours and care elements, an association was identified between care receipt and a greater number of appointments in the previous 12 months, and a diagnosis of schizophrenia, diabetes or respiratory illness. Such findings suggest mental health clinicians are more likely to provide preventive care where they feel that time permits (28, 44, 61), or when it is clinically indicated (24, 33). Given that people with schizophrenia are at highest risk of chronic disease morbidity and mortality (65, 66) and of experiencing a reduced life expectancy (1, 3, 67), the finding that clients with a diagnosis of schizophrenia were less likely to receive care for alcohol consumption suggests initiatives to increase the provision of such care for this client group are a particular priority. To maximise the benefits it is important to provide preventive care routinely to all clients. Approaches to care delivery which limit the time required of clinicians, including reduced models of care such as the '2As and R' should be considered in the mental health setting (17-20). Further, systems changes such as information technology approaches to prompt preventive care delivery (18, 68) and the automation of referrals should be implemented to support clinicians (20, 69).

The results should be interpreted in light of a number of limitations. Client reported receipt of preventive care in general health care settings has been acknowledged as more reliable than clinician reports (31). However, to the authors' knowledge no studies have reported the validity of such measures in mental health settings specifically. The extent to which the receipt of such care in this study is either an over or under estimate of the care actually received is unknown. Participants were selected on the basis of having a community mental health appointment in the prior two weeks. As the survey questions addressed care

without specification of timeframe the potential exists for some clients to have responded regarding the receipt of care over a longer timeframe. Subsequent analyses have indicated that over 80% of clients responded to this item in terms of their most recent appointments with the service. Diagnoses were self-reported by participants, hence may reflect self-diagnosis rather than health professional diagnosis. Lastly, although data were collected from a health district covering a large geographical area with metropolitan, regional, and rural communities, the ability for the findings to be generalised to other settings is unknown.

The current study has demonstrated that despite the receipt of preventive care for health behaviour risks being highly acceptable to clients, client reported receipt of such care during community mental health appointments is sub-optimal. Given the well-documented poor physical health within this population, and the high prevalence of health risk behaviours, it is imperative that mental health services provide preventive care routinely. Strategies to increase the delivery of routine preventive care within mental health services, such as information technology approaches and automated referrals, are likely required.

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Conflicts of interest

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Table 1. Description of sample (N=558)

Demographic	n	%
Male	262	47%
Employed	126	23%
Aboriginal and/or Torres Strait Islander	27	5%
Age (Years). Range 18-85 (<i>m</i> =40.6, <i>sd</i> =15.1)		
18-34	222	40%
35-54	229	41%
55 and over	107	19%
Marital status		
Married/living together in a relationship	138	25%
Previously or never married	420	75%
Highest education level completed^a		
Some high school, or less	258	46%
Completed high school or equivalent	103	19%
Completed technical certificate or diploma	136	24%
Completed University or College degree, or higher	61	11%
Psychiatric Diagnosis^{b,c} (N=520)		
Depression	326	63%
Bi-polar disorder	115	22%
Schizophrenia/other psychotic illness	163	31%
Anxiety disorder	205	39%
Other mental illness ^c	14	3%
Number of CMH appointments in previous 12 months^d		
Range= 1-207, (<i>m</i> =15.4, <i>sd</i> =20.7)		
1-2	151	27%
3-11	178	32%
12 +	229	41%
Geographic remoteness^{e,f} (N=555)		
Major cities	418	75%
Regional / rural	137	25%
Index of disadvantage^e (N=555)		
Lowest tertile	222	40%
Middle tertile	314	57%
Highest tertile	19	3%
Prevalence of risk		
Smoking ^g	283	51%
Harmful alcohol consumption ^h	241	43%
Inadequate fruit and/or vegetable consumption (<i>n</i> =557) ⁱ	483	87%
Inadequate physical activity ^j	261	47%

^a For chi-squared/regression analyses, variable dichotomised (less than high school Vs completed high school or greater)

^b Numbers in diagnostic categories do not add to total participant numbers as participants could elect multiple diagnoses. Data unavailable for 38 participants, due to changes to the interview script during the study period. 1 participant refused to answer, and 24 participants reported no psychiatric conditions for which they were receiving care

^c Other mental illness includes participants who responded 'other' to the question regarding psychiatric diagnoses, and who did not also respond to a main diagnostic category. Includes eating disorders, attention deficit disorder, personality disorders and 'unsure' responses

^d Variable categorised to reflect clients with occasional appointments (1-2), less than monthly (3-11 appointments), and monthly or more appointments (12 +)

^e Data unavailable for 3 participants with no fixed home address

^f Uses the Accessibility/Remoteness Index of Australia (ARIA) to measure the accessibility of a service centre (defined as an urban centre with a population equal to or greater than 5,000) from the client's locality of residence (56)

^g Smoking any tobacco products (47)

^h Consuming more than two standard drinks on average per day, or more than four standard drinks on any one occasion (48)

ⁱ Consuming less than two serves of fruit or five serves of vegetables per day (49)

^j Engaging in less than 30 minutes of physical activity on at least five days of the week (50)

Table 2. Client reported acceptability of preventive care receipt by health behaviour and element of preventive care

Element of Preventive Care	Acceptable to receive preventive care (Agree/Strongly Agree)											
	Smoking			Harmful Alcohol Consumption			Inadequate fruit and/or vegetable consumption			Inadequate Physical Activity		
	N	n	%	N	n	%	N	n	%	N	n	%
Assessment	558	534	96%	558	543	97%	557	500	90%	558	536	96%
Brief Advice ^a	283	244	86%	241	224	93%	483	434	90%	261	244	94%
Referral ^a	283	253	89%	241	219	91%	483	427	88%	261	234	90%

^a Limited to clients who were at-risk

Table 3. Proportions of clients reporting receipt of assessment for each health risk behaviour, and further care (brief advice, referral/follow-up) for behaviours for which they were at risk and assessed ^a

Element of Preventive Care	Health Risk Behaviour - % (n)															
	Smoking				Harmful Alcohol Consumption				Inadequate fruit and/or vegetable consumption				Inadequate Physical Activity			
	N	n	%	95% CI	N	n	%	95% CI	N	n	%	95% CI	N	n	%	95% CI
Assessment	558	406	73%	69.1-76.5	558	423	76%	72.2-79.4	557	143	26%	22.0-29.3	557	319	57%	53.2-61.4
Brief Advice ^{b, c}	226	178	79%	73.4-84.1	200	145	73%	66.3-78.7	124	85	69%	60.3-76.8	162	138	85%	79.7-90.7
Referral/Follow-up ^c																
Spoken to about helpline	226	92	41%	34.3-47.2	N/A	N/A	N/A	N/A	124	25	20%	13.0-27.3	162	20	12%	7.2-17.5
Offered to arrange referral to helpline	226	16	7%	3.7-10.4	N/A	N/A	N/A	N/A	124	1	1%	.0-2.4	162	6	4%	.8-6.6
Advised to speak to general practitioner or AMS	226	29	13%	8.4-17.2	200	23	12%	7.0-16.0	124	2	2%	.0-3.9	162	3	2%	.0-4.0
Advised to use other support types	226	65	29%	22.8-34.7	200	75	38%	30.7-44.3	124	38	31%	22.4-38.9	162	67	41%	33.7-49.0
Advised to use ANY referral/follow-up ^d	226	111	49%	42.-55.7	200	75	38%	30.7-44.3	124	53	43%	33.9-51.6	162	75	46%	38.5-54.1
Complete Care (advice and any referral/follow-up) ^{b, c, d}	226	108	48%	41.2-54.3	200	74	37%	30.3-43.7	124	46	37%	28.5-45.7	162	72	44%	36.7-52.2

^a Clients who responded 'don't know' to care related items were categorised as not having received care

^b Advice for smoking includes being advised to quit smoking, or being advised to use nicotine replacement therapy

^c Limited to clients who were at-risk and reported being assessed

^d Any referral/follow-up includes: spoken to about helpline, offered referral to helpline, advised to speak to GP or AMS, advised to use others support types

Table 4. Association between receipt of assessment and complete care (advice *and* referral/follow-up) following risk assessment, with client diagnostic and clinical characteristics ^a

Predictor	B	SE	OR	95% CI	<i>p</i>
Outcome					
Assessment					
Smoking					
No sig. predictors	-	-	-	-	-
Fruit and/or vegetable					
No sig. predictors	-	-	-	-	-
Alcohol					
Schizophrenia ^{b,c}	-.47	.24	.63	.40-.99	.05
Physical Activity					
Number of appointments in last 12 months (reference:1-2)					<.001
3-11	.89	.24	2.43	1.53-3.85	-
12+	1.11	.23	3.05	1.95-4.77	-
Complete further care					
Smoking					
Number of appointments in last 12 months (reference:1-2)					.01
3-11	.82	.39	2.28	1.07-4.86	-
12+	1.06	.36	2.88	1.41-5.90	-
Fruit and/or vegetable					
Diabetes ^b	1.44	.63	4.22	1.23-14.43	.02
Respiratory ^b	1.20	.57	3.32	1.08-10.18	.04
Alcohol					
Schizophrenia ^{b,c}	-1.58	.44	.21	.09-.49	<.001
Number of appointments in last 12 months (reference:1-2)					.001
3-11	-.35	.48	.70	.28-1.80	-
12+	1.16	.42	3.19	1.40-7.30	-
Physical Activity					
Diabetes ^b	1.52	.58	4.59	1.47-14.33	.009

^a Logistic regression models adjust for client age, gender, employment status, marital status, highest education attained, Aboriginality, and remoteness

^b 'Yes' versus 'no'

^c Includes schizophrenia and other psychotic illness