The prevalence of mental disorders among children, adolescents and adults in the western Cape, South Africa

S Kleintjes[1], AJ Flisher[2], M Fick[3], A Railoun[4], C Lund[2], C Molteno[2], BA Robertson[2]
[1]Human Science Research Council, [2]Department of Psychiatry, University of Cape Town, [3]Private Consultant, [4]Department of Health, Provincial Administration of the Western Cape (PAWC), South Africa

Abstract
Objective: To provide estimates of the prevalence of selected mental disorders in the Western Cape, based on the consensus achieved by a working group established for this purpose. **Method:** An expert working group was established to provide technical expertise for the project. Potential risk factors likely to influence local prevalence rates were identified. Annual prevalence rates for adults and for children and adolescents were derived by consensus, informed by a systematic literature review. Prevalence rates were derived for individual disorders and adjusted for comorbidity. **Results:** The overall prevalence was 25.0% for adults and 17.0% for children and adolescents. **Conclusion:** Prevalence rates of child, adolescent and adult mental disorders were derived in a short period of time and with the use of minimal resources. Although of unknown validity, they are useful for policy development and for planning service utilisation estimates, resource costing and targets for service development for local mental health needs. This in the absence of an existing methodologically sound national prevalence study. We recommend that policy and programme developers draw on the expertise of local academics and clinicians to promote research-informed planning and policy development in the public sector.

Keywords: Prevalence; Mental disorders; Policy development

Received: 13.06.05
Accepted: 11.08.05

Introduction

The Department of Health, Provincial Administration of the Western Cape (PAWC) conducted a health care service review and planning process during 2002 and 2003. The review process culminated in Healthcare 2010, a strategic plan for reshaping the provincial health services to improve quality of care within available resources.[1] The strategic plan prioritises strengthening the capacity of primary health care settings for treatment, reshaping infrastructure and building on staffing capacity to meet the health needs of service users. It provides an opportunity for integrating mental health service delivery into the public healthcare system in the Western Cape, in line with international and national trends.

Internationally, there is consensus that the settings for mental health service provision should primarily be general hospitals and primary health care centres rather than custodial settings. The provision of mental health services in general health care settings should be supported by adequately trained (mental) health workers, readily available and appropriate psychotropic medication, and a safety net of appropriate community care facilities and services for achieving, maintaining and improving the psychosocial well being of mental health service users.[2-3]

Mental health service planning should be based on a systematic localized analysis of current mental health service resources, an assessment of the population requiring services and their unmet mental health needs, and an estimation of required resources to meet these needs.[4] This information is needed to set achievable mental health service development

Correspondence:
S Kleintjes, HSRC, 10th floor, Pleinpark Building, 69-83 Plein Street, Cape Town, 8000, South Africa
email: skleintjes@hsrc.ac.za

targets in line with local health developments, service constraints and priorities.

Prevalence rates, adjusted for local population factors, provide a starting point for establishing the overall need for mental health services in a region. Consultations conducted at the end of 2002 by the first author (SK) in her role then as the Western Cape provincial mental health programme manager (PAWC), revealed an absence of national or provincial prevalence rates for mental disorders to inform the programme's input to service planning in the Western Cape. Ideally, prevalence rates are derived from local epidemiological data on psychiatric morbidity and disability, a costly and long-term project. In the absence of this data, best estimates based on other sources of information and expert opinion may be synthesised to provide working estimates of prevalence rates for disorders, adjusted for local factors.[5] The latter process was selected for this project to provide the required estimates of mental health prevalence rates within the shortest timeframe, to inform contemporary planning processes within the province.

The aim of this paper is to report on the research process used by a working group established to formulate estimates of the prevalence of selected mental disorders in the Western Cape.

Methods

A working group was established by the mental health programme (PAWC) to provide technical expertise for the project. The working group consisted of departmental representatives (SK and AR), mental health clinicians/ academics with extensive international and local research experience in the field of mental health (AF, BR, CM and CL) and a research assistant with a postgraduate mental health qualification (MF). The working group held an initial 2- hour planning meeting to arrive at a common understanding of the process to be followed to develop estimates. This process included: (i) reaching consensus on the scope of the project, (ii) deciding which mental disorders to include, (iii) considering potential risk factors likely to influence local prevalence rates, (iv) identifying essential sources of information, (v) conducting a systematic literature review of international and national mental health prevalence studies, (v) developing a process for deriving the estimates, and (vi) deriving the estimates by consensus.

A systematic review of all DSM IV disorders was conducted, and an initial list of disorders for inclusion in the study was derived based on clinical and theoretical consensus regarding the disorders which (a) have the greatest burden of disability and/or (b) are most commonly present in clinical practice in the Western Cape. The research assistant (MF) conducted an online literature search (Medline, Sabinet) and compiled a synthesis of relevant epidemiological studies spanning the period 1985-2002. The working group used this synthesis to finalise the list of selected disorders for inclusion in the study, and to draft and finalise estimates during two further 4-hour consultation meetings. The epidemiological studies considered are listed in Appendix 1. In deriving estimates, greater weight was given to studies that were methodologically superior. Also, the more proximal to the Western Cape the study population, the greater the weight given to that study, all else being equal. For example, a Western Cape study received greater weight than a Gauteng study, which in turn received more weight than a Zimbabwean study.

The prevalence estimates were also modified to take account of the prevalence of risk factors for a particular mental disorder in the Western Cape. If a risk factor was considered more prevalent in the Western Cape than the population on which an estimate was based, the prevalence rate was increased accordingly. Risk factors considered included HIV infection, poverty, unemployment, urbanisation, and exposure to violence, crime and other trauma.

Annual prevalence rates were selected for this project as an estimate of how many people need service during an average year, as these rates can inform annual departmental projections and budgets for service development. The diagnoses were based on the Diagnostic and Statistical Manual for Mental Disorders (DSM 1V).[6]

Mental disorders are characterized by a high rate of comorbidity, in that individuals may present with more than one disorder at a given time.[7] For this reason, it was necessary to adjust the rates of individual disorders to prevent an overestimation of the likely burden on services. A hierarchy of disorders was created in which severe disorders (schizophrenia and bipolar affective disorder) were given service priority. To allow for comorbidity with these priority disorders, the remaining disorders were reduced in proportion to their weighting relative to the total disorders. This was translated into the formula (n ÷ total of individual disorders) × (overall prevalence of disorders – prevalence of severe chronic disorders), where n represented the rate of an individual disorder other than severe chronic disorders.

Comorbid prevalence rates for intellectual disability were not derived as it is assumed that persons with intellectual disability are included in the general population on which the estimates of disorders were based.

The rates of individual disorders provide a useful indication of likely clinical burden and can be used as a tool for training clinicians and to plan for the needs of specific disorders. The comorbidity-adjusted rates are intended for resource planning for the full range of mental health services, as they provide a more accurate calculation of the number of individuals who are likely to use services during an average year.

Results

Table I provides the prevalence estimates for the disorders included in the study. The overall prevalence was 25.0% for adults and 17.0% for children and adolescents. Among adults, the most common unadjusted prevalence rate was for nicotine use (48.0%), followed by alcohol dependence and major depressive disorder/dysthymia (both 15.0%). The anxiety disorders were the next most frequent, 6.0% for generalized anxiety disorder and posttraumatic stress disorder, and 5.0% for simple phobia. For children and adolescents, the most common disorders were generalised anxiety disorder (11.0%), followed by posttraumatic stress disorder and major depressive disorder/dysthymia (both 8.0%).

Table I Prevalence of mental disorders in the Western Cape.

Disorder	*Annual Prevalence (%)*	
	Unadjusted	*Adjusted for comorbidity*
Adulthood		
Intellectual Disability (IQ below 70)	2.5	
Intellectual Disability (IQ below 50)	0.4	
Intellectual Disability (IQ below 30)	0.1	
Dementia	3.0	
Alcohol Abuse	7.0	2.37
Alcohol Dependence	15.0	5.07
Drug Abuse	1.0	0.34
Drug Dependence	3.0	1.01
Nicotine Use	48.0	
Schizophrenia	1.0	1.00
Major depressive Disorder/dysthymia	15.0	5.07
Bipolar Disorder	1.0	1.00
Panic Disorder	1.0	0.34
Agoraphobia	3.0	1.01
Simple Phobia	5.0	1.69
Social Phobia	4.0	1.35
Obsessive Compulsive Disorder	2.0	0.68
Generalised anxiety disorder	6.0	2.03
Posttraumatic stress disorder	6.0	2.03
Overall	25.0	25.0
Childhood and Adolescence		
Intellectual Disability (IQ below 70)	2.5	
Intellectual Disability (IQ below 50)	0.4	
Intellectual Disability (IQ below 30)	0.1	
Attention Deficit Hyperactivity Disorder	5.0	1.25
Conduct Disorder	4.0	1.00
Oppositional Defiant Disorder	6.0	1.50
Enuresis	5.0	1.25
Separation Anxiety Disorder	4.0	1.00
Schizophrenia	0.5	0.50
Depressive Disorder and Dysthymia	8.0	2.00
Bipolar Disorder	1.0	1.00
Agoraphobia	3.0	0.75
Simple Phobia	3.0	0.75
Social Phobia	5.0	1.25
Generalised Anxiety Disorder	11.0	2.75
Posttraumatic Stress Disorder	8.0	2.00
Overall	17.0	17.00

Discussion

This project has provided estimates for prevalence rates of selected child, adolescent and adult mental disorders in a short period of time and with the use of minimal resources. Although the estimates are of unknown validity, they are more preferable for policy and planning purposes than estimates based on personal opinions or the uncritical application of results from prevalence studies elsewhere. This information has been used to inform the development of a service framework for mental health in the Western Cape Province. Specifically, the estimates contributed to service utilisation estimates, resource costing and service development targets proposed for the mental health component of the Healthcare 2010 plan in the province.

This project has some important limitations. First, the estimates reflect the considered consensus of a group of clinicians, managers and researchers. Every attempt was made to base the estimates on research findings, both in terms of descriptive prevalence studies and analytical risk factor studies. However, clinical experience and common sense influenced the estimates, especially in the absence of research evidence. It is possible that a different consensus group may have arrived at different prevalence estimates. Second, there were pressing time constraints. For this reason, we were able to consult only a limited number of key articles and sources of information. Thirdly, the list of prevalence estimates is not exhaustive. Disorders such as epilepsy, somatoform, pain, and conversion disorders, and the autistic spectrum disorders were not included in the study. No studies were found which facilitated the development of annual prevalence rates for nicotine dependence for children, adolescents and adults. Prevalence rates for alcohol dependence and nicotine use in children and adolescents were also not derived, as insufficient literature was available to inform the development of these estimates. A prevalence rate for nicotine use (smoking prevalence) was derived for adults. This estimate is important given the health risks associated with smoking per se, and because smoking prevalence informs monitoring of the impact of current national legislative, policy and health promotion initiatives to reduce smoking rates in South Africa. Clearly, there is room for expansion of the preliminary output of this project.

Ideally, a methodologically sound prevalence study in the Western Cape, with a representative sample and instruments that have been developed specifically for this population, would be preferred. However, such a study would literally cost millions of rands. Given resource constraints faced by service planners and providers, we believe that the people of the Western Cape would be more appropriately served if available resources were allocated to service provision or health services operational research at this time, particularly as it is by no means certain that a large scale study will yield new findings which will significantly affect planning.

Conclusion

This study has shown the benefit of collaboration between academic clinicians and researchers, on the one hand, and service planners and policy-makers within government structures on the other. We recommend that policy and programme developers draw on the expertise of local academics and clinicians to promote research-informed planning and policy development in the public sector.

References

1. *Department of Health (PAWC). Healthcare 2010: Strategic plan for health in the Western Cape Province. Cape Town: Provincial Administration of the Western Cape, South Africa, 2003.*
2. *World Health Organisation. The World Health Report 2001: New Understanding, New Hope. Geneva: World Health Organisation, 2001.*
3. *Government of the Republic of South Africa. Mental Health Care Act no 17 of 2002. Pretoria: Government Printer, 2002.*
4. *World Health Organisation. Planning and budgeting to deliver services for mental health. Geneva: World Health Organisation, 2001.*
5. *Thornicroft G, Tansella N. The mental health matrix: a manual to improve services. Cambridge: Cambridge University Press,1999.*
6. *American Psychiatric Association. Diagnostic and Statistical Manual of Mental Disorders (DSM-1V), 4th ed. Washington DC: American Psychiatric Association, 1994.*
7. *Kessler RC, Stang PE, Wittchen H, et al. Lifetime panic-depression comorbidity in the National Comorbidity Survey. Arch Gen Psychiat Sep 1998; 55(9): 801-808.*

Appendix 1: Epidemiological studies considered in the development of prevalence rates

South Africa

- Barnard EJ, Gagiano CA, Joubert G. Patients with chronic mental illness attending outpatient groups – factors influencing compliance. S Afr Med J 1998; 88: 752-758.
- Bhagwanjee A, Parekh A, Paruk Z, et al. Prevalence of minor psychiatric disorders in an adult African rural community in South Africa. Psychol Med1998; 28: 1137-1147.
- Cherian V, Cherian L. Minor psychiatric morbidity in South African secondary school pupils. Psychol Rep 1999; 85: 397-402.
- Claasen JN. The benefits of the CAGE as a screening tool for alcoholism in a closed rural South African community. S Afr Med J 1999; 89: 976 – 979.
- Cooper PJ, Tomlinson M, Swartz L, et al. Post-partum depression and the mother infant relationship in a South African peri-urban settlement. Br J Psychiat I999; 175: 554-558.
- Ensink K; Richardson KA; & Robertson BA. The Empilweni Project Southern African Journal of Child & Adolescent Psychiatry 1994; 6: 62-68.
- Ensink K, Robertson BA; Zissis C & Leger P. Post-traumatic stress disorder in children exposed to violence. S Afr Med J 1997; 87: 1526-1530
- Flisher AJ, Riccitelli G & Jhetam N. What do female and male psychiatrists in South Africa do? S Afr Med J 1998; 88:760-765.
- Gillis LS, Wellman M, Koch A & Joyi M. Psychological distress and depression in urbanising elderly black persons. S Afr Med J 1991; 79: 490-495.
- Hirschowitz R, Orkin M. Trauma and mental health in South Africa. Soc. Indic. Res 1997; 41: 169.
- Kromberg JGR, Christianson AL, Manga P; et al. Intellectual disability in rural black children in the Bushbuckridge District of South Africa. Southern African Journal of Child and Adolescent Mental Health. 1997; 9: 2-11.
- Lockhat R & Van Niekerk, A South African Children: A history of adversity, violence and trauma. Ethn.Health 2000; 5: 291.
- May PA, Brooke L, Gossage P, et al. Epidemiology of Fetal Alcohol Syndrome in a South African Community in the Western Cape Province AJPH 2000; 90: 1905-1912.
- Molteno CD & Ahmed N. Development of children with Down syndrome. Southern African Journal of Child and Adolescent Mental Health 1997; 9: 29-37.
- Molteno CD & Krajewski A. Epilepsy in children with mental handicap. Southern African Journal of Child and Adolescent Mental Health 1997; 9: 38-43.
- Molteno CD, Roux A, Kench E & Selfe S. A study of mentally handicapped children, requiring special care in Cape Town. Southern African Journal Child and Adolescent Psychiatry 1994; 6: 8-11.
- Molteno G, Molteno CD, Finschilescu G & Dawes ARL. Behavioural and emotional problems in children with intellectual disability attending special schools in Cape Town, South Africa J intellectual. Disabil. Res. 2001; 45: 1-6.
- Nair GM & Jhetam OS. Profile of South African general hospital psychiatric unit: determination of future need and requirements S Afr Med J 1998; 88: 746-752.
- Peden M, van der Spuy J, Smith P & Bautz P Substance Abuse and trauma in Cape Town S Afr Med J 2000; 90: 251-255.
- Peltzer K. Post-traumatic stress symptoms in a population of rural children in South Africa Psychol Rep 1999; 85: 646-650.
- Peltzer, K. Traumatic experiencing and post traumatic psychological symptoms in South African University students. Cent. Afr. J Med 1998; 44: 280-283.
- Reddy P, Meyer-Weitz A & Yach D. Smoking status, knowledge of health effects and attitudes toward tobacco control in South Africa. SAMJ 1996; 86: 1389-1393.
- Robertson BA, Ensink K, Parry CDH & Chalton D. Performance of the diagnostic interview schedule for children version 23 (DISC-23) in an informal settlement area in South Africa. J.Am. Acad. Child Adolesc. Psych. 1999; 38: 1156-1164
- Robertson B & Berger S. Child psychopathology in South Africa In A Dawes & D Donald Childhood and Adversity. Cape Town: David Phillips, 1994.
- Robertson BA, Ensink K; Parry CDH & Chalton, D. Prevalence and detection of psychiatric disorders among children and adolescents attending primary health care clinic Southern African Journal of Child & Adolescent Mental Health 2001; 13: 30-40.
- Rudd C & McMaster J. Childhood mental health problems in primary health care in a developing country: Some factors influencing detection by primary health care nursing staff Southern African Journal of Child & Adolescent Mental Health 1996; 8: 2-12.
- Rumbold S, Swartz L, Parry C & Zwarenstein M. Prevalence of psychiatric morbidity in the adult population of a rural South African village Psychol Med 1996; 26: 997-1007.
- Saunders J. HIV and mental health. In: Robertson B, Allwood C, Gagiano C. Textbook of psychiatry for Southern Africa. Oxford: Southern Africa, 2001.
- Schneider M, Claassens M, Kimmie Z, et al. The extent of moderate and severe reported disability and the nature of the disability experience in South Africa. Community Agency for Social Enquiry, South Africa, 1999.
- Seedat S, van Nood E, Vythillingum, B, Stein DJ & Kaminer D. School survey of exposure to violence and post-traumatic stress symptoms in adolescents Southern African Journal of Child and Adolescent Mental Health 2000; 12: 38-44.
- Strauss PR, Gagiano CA, Van Rensburg PHJJ, de Wet KJ & Strauss HJ. Identification of depression in a rural general practice. S Afr Med J 1995; 84: 755-762.
- Struthers H. The likely impact of HIV/AIDS on service provision for people with severe mental illness. Report submitted to the Department of Health, Gauteng, South Africa, 2002.
- Smith C & Holford L. Post-traumatic stress disorder – South Africa's Children and Adolescents. Southern African Journal of Child and Adolescent Psychiatry 1993; 5(2): 39-43.
- Szabo CP. Mood disorders and season of presentation S Afr Med J 1994; 84: 35-37.
- Thom RGM, Zwi RM & Reinach SG. The prevalence of psychiatric disorders at a primary care clinic in Soweto, Johannesburg S Afr Med J 1993; 83: 653-655
- Vogel W & Holford, L. Child Psychiatry: An audit of presenting problems and diagnosis at two clinics in 1997 Southern African Journal of Child & Adolescent Mental Health 1999; 11: 38-48.
- Zissis C; Ensink K & Robertson B. A community study of taxi violence and distress symptoms amongst youth. Southern African Journal of Child and Adolescent Mental Health 2000; 12: 151-160.

International

- Blazer DG, Kessler RC, McGonagle KA, & Swartz MS. The prevalence and distribution of major depression in a national community sample: the National Comorbidity Survey. Am.j psychiatr 1994; 151: 979-986.
- Bird HR. Epidemiology of childhood disorders in a cross cultural context. J Child Psychol Psyc 1996; 37: 35-49.
- Breslau N. Epidemiologic Studies of Trauma Posttraumatic Stress Disorder and Other Psychiatric Disorders. Can J Psychiat 2002; 47: 9chosom Res23-929.
- Bryson E. & McLaren J. Review of recent epidemiological studies of mental retardation: Prevalence, associated disorders, and etiology. Am J Ment Retard 1987; 92: 243-254.
- Catalan J, Beevor A, Cassidy L, et al. Women and HIV Infection: Investigation of its psychosocial consequences. J nPsy1996; 41: 39-47.
- Kessler RC, Sonnega A, Bromet E, Hughes M, & Nelson CB. Posttraumatic stress disorder in the National Comorbidity Survey. Arch Gen Psychiat 1995; 52: 1048-1060.
- Kessler RC, McGonagle KA, Zhao S, et al. Lifetime and 12-month Prevalence of DSM-III-R Psychiatric Disorders in the United States: Results from the National Comorbidity Survey. Arch of Gen Psychiat 1994; 51: 8-19.
- McKinnon K, Carey MP & Cournous FResearch on HIV, AIDS, and severe mental illness: recommendations from the NIMH National Conference. Clin Psychol Rev 1997; 17: 327-331.
- Murray CJL & Lopez AD. The Global Burden of Disease. Geneva: World Health Organization, 1996.
- Murphy MJ, Laird NM, Monson RR, Sobol AM, & Leighton AH. A 40-year perspective on the prevalence of depression. The Stirling County Study. Arch Gen Psychiat 2000; 57: 209.
- Parker G, Gladstone G.& Chee KT. Depression in the planet's largest ethnic group: the Chinese. Am j psychiatr 2001; 158: 857-864.
- Perkonigg A, Kessler RC, Storz S & Wittchen HU. Traumatic events and posttraumatic stress disorder in the community: prevalence, risk factors and comorbidity. Acta Psychiat Scand 2000; 101: 46-59.
- Shaffer MD, Fisher P, Dulcan MK, et al. The NIMH Diagnostic Interview Schedule for Children Version 2.3 (DISC-2.3); Description, Acceptability, Prevalence Rates, and Performance in the MECA Study. J.Am. Acad.Child Adolesc. Psych. 1996; 35: 865-875.
- Stein Z; Belmont L & Durkin M. Mild Mental Retardation and Severe Mental Retardation Compared: Experience in Eight Less Developed Countries. Upsala J Med Sci 1987; Suppl. 44: 89-96.
- Swartz JM & Marsh L. Lifetime prevalence of panic states. A j.psychiatr 1993; 150: 246-249.