Pediatric consultation-liaison psychiatry: a description of the consultation-liaison service offered by a tertiary level children's hospital in Cape Town, South Africa.

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The research reported is based on independent work performed by the candidate and neither the whole work nor part of it has been, is being, or is to be submitted for another degree to any other university. The work has not been reported or published prior to registration for the abovementioned degree. It is presented in publication-ready format.

Supervisor

Prof Petrus J de Vries

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Abstract

Study Rationale

There is a growing awareness of the need for psychiatric consultation-liaison (CL) services to pediatrics. Unlike work in adult liaison psychiatry, which in some countries has seen a rapid expansion in recent years, very little is known about the extent and nature of pediatric liaison work. The vast majority of existing literature on CL services to pediatrics is from services in high-income countries. At present, no research literature is available on psychiatric CL services to pediatrics in South Africa. The aim of this study was to describe the CL service offered to Red Cross War Memorial Children's Hospital (RCWMCH) by The Division of Child and Adolescent Psychiatry (DCAP) and the perceived satisfaction, and expectations of, child health staff with the CL service.

Methods

The study took place in two parts. A retrospective review of cases referred to DCAP from RCWMCH between November 2011 and October 2012 was conducted and data were collected on age, gender, race, income status, referring agent, reason for referral, assessing clinician, medical diagnosis, psychiatric diagnosis, psychiatric medications prescribed, psychiatric management plan and case outcome. A survey questionnaire was distributed to child health staff and the information received was analyzed.

Results

The majority of referrals requested an evaluation for possible depression. Major Depressive Episode (MDE) was the most common psychiatric diagnosis reflecting high rates of this disorder

in chronically ill patients. Interestingly, only 38% of those referred for possible depression met clinical criteria for MDE. Risk factors for MDE included low socio-economic status and a medical diagnosis of chronic renal, cardiac or HIV illness. Survey results showed a high level of satisfaction by child health staff who raised the importance of the CL service. Results indicated that child health staff ranked; perceived accessibility to CL clinicians, the need for a psychologist and Xhosa–speaking mental health practitioners, a counseling service aimed at trauma-focused support of patients, and participation in psychosocial ward rounds as priority expectations.

Conclusion

The CL service offered by DCAP to RCWMCH was shown to be valued by child health staff. Results indicated a number of key directions for further training and service development. This study was the first to our knowledge to describe a pediatric CL service from Africa and other low/middle-income settings. Findings may be of benefit for similar services in other centers.

Part A: Study Protocol

The Study Protocol

Pediatric Consultation-Liaison Psychiatry: a description of the consultation-liaison service offered by a tertiary level children's hospital in Cape Town, South Africa.

Project Summary

A formal description of the current consultation-liaison (CL) service offered by the Division of Child and Adolescent Psychiatry (DCAP) will provide the first South African research into the area of psychiatric CL to pediatrics. It will allow for an assessment of the strengths, weaknesses and gaps in the current service and provide an opportunity to recommend modifications to the service and appropriate staffing to the multi-disciplinary team (MDT). DCAP is the child and adolescent psychiatry division of Red Cross War Memorial Children's Hospital (RCWMCH) in Cape Town, South Africa, a tertiary facility providing comprehensive dedicated pediatric services with a full range of sub-specialties at quaternary, tertiary and secondary levels of care.

The broad aims of the study include a description of cases referred to CL over a twelve-month period and an assessment of child health staff satisfaction with, and expectations of, the service. It will be a retrospective case review. Permission for the study will be sought from the University of Cape Town (UCT) Research and Ethics Committee and the CEO of RCWMCH. The research will be conducted by the principal investigator.

All CL referrals made to DCAP over a twelve month period will be eligible for inclusion into the study. A CL assessment form will be completed which includes demographic details of patients and key points related to the assessment and treatment of individual cases. A survey will be conducted to determine child health staff satisfaction with, and perceived expectations of, the CL service. A survey questionnaire will be manually given to health professionals working at

RCWMCH. The survey will contain twelve questions designed for rapid completion in order to maximize response rates. Included in the survey are questions designed to assess the frequency of CL requests, reasons for referral, impairments to referral, expectations of a CL service, teaching and training requirements and comments on the need for trauma counseling services at the hospital.

Outcomes from the study are to document the number, characteristics and management of all cases referred to the CL service at DCAP over a twelve-month period. Additional outcomes include the identification of strengths and weaknesses of the current CL service, information on appropriate areas of service development and to act as a potential model of care for other pediatric CL teams across South Africa. Results will be disseminated to the staff of DCAP, management staff at RCWMCH, Department of Psychiatry UCT, and peer-reviewed journals for publication. Some of the challenges anticipated include difficulties in data collection due to inadequate documentation and low numbers of survey completion and submission.

General information

1. Title: Pediatric consultation-liaison psychiatry: a description of the consultation-liaison service offered by a tertiary level children's hospital in Cape Town, South Africa.

2. Principal investigator (PI) is Dr Terri Henderson, Division of Child and Adolescent Psychiatry, 46 Sawkins Road, Rondebosch, 7700. (Tel 021 6854103)

Rationale and background information

There is a growing awareness of the need for psychiatric CL services to pediatrics. Unlike work in adult liaison psychiatry, which in some countries has seen a rapid expansion in recent years, very little is known about the extent and nature of pediatric liaison work[1]. Factors differentiating CL work with children from that of adults include the nature of the clinical problems encountered, the inclusion of family systems and the consideration of a developmental perspective [2, 3]. The vast majority of existing literature on CL services to pediatrics is from services in high-income countries. At present, no research literature is available on psychiatric CL services to pediatrics in South Africa.

Research into pediatric CL may well be particularly crucial in young patients who are often more vulnerable to adverse influences and perhaps also uniquely responsive to preventive or curative intervention[2]. Pediatric CL services are in the unique position to prevent future psychosocial morbidity with early intervention and are therefore an area where the potential benefits are great. CL services are perceived as effective and are valued by both referring professionals and parents of children referred for psychiatric consultation[4].

The relevance of research into the current psychiatric CL service to pediatrics would allow for an assessment of the strengths, weaknesses and gaps in the current service. It will create an awareness of areas that need to be modified and expanded. It will enable us to make recommendations on an appropriate structure of the service. An evaluation of the perceptions and expectations of the current CL service are essential to understanding the relationship between pediatrics and child psychiatry at RCWMCH. It is particularly important to identify the areas in

which the service is currently effective, as well as the possible shortcomings of the service, in order to plan and resource the service to attain treatment and service goals.

Study Goals

The study aims to:

1. Describe the current CL service offered to RCWMCH by DCAP.
2. Describe the referral process, assessment, diagnosis and management of pediatric cases seen by the CL service at RCWMCH between November 2011 and October 2012.
3. Survey child health staff satisfaction with, and expectations of, the CL service.

Study Design

The study will be a retrospective case review of all cases referred to the psychiatric CL service at DCAP from RCWMCH between 1 November 2011 and 31 October 2012.

There will be no exclusion criteria. It is expected that the study duration will be 18 months.

Methodology

All referrals made from RCWMCH between 1 November 2011 and 31 October 2012 will be included for data collection. An estimated number of cases is120.

The study will take place in two parts.

Part I:

The following information will be collected on each case referred; age, gender, race, income status, referring agent, reason for referral, assessing clinician, medical diagnosis, psychiatric

diagnosis, psychiatric medications prescribed, psychiatric management plan and case outcome. See Annexure A for details of data collection.

Part II:

A survey will be conducted to determine child health staff satisfaction with, and perceived expectations of, the CL service. The survey will be presented for completion at a RCWMCH academic meeting. Approximately eighty child health staff will be targeted. The survey will contain twelve multiple-choice questions designed for rapid completion in order to maximize response rates. Included in the survey are questions designed to assess the frequency of CL requests, reasons for referral, impediments to referral, expectations of a CL service, teaching and training requirements and comments on the need for a trauma counseling service at the hospital. Any questionnaires returned within six weeks will be included in the data collection and analysis. See Annexure B for details of the survey form.

Safety considerations

Confidentiality will be ensured in the following manner:

a. Data will be coded. A master list, which will allow for the coding of the patient's identity, will be used, accessible only to the PI, and stored in a locked cabinet.

b. Data will be collected and stored in a password protected computer file.

c. Individual patients will be known to those individuals on the CL team but they will not be identifiable in any publications or presentations.

Data management and statistical analysis

a. The PI will request the medical folders and psychiatric confidential folders from RCWMCH. They will be delivered to DCAP which is part of the RCWMCH establishment. Data will be collected from the medical records at DCAP over the period of one a week. The folders will be kept in a locked room and will be returned to the registry office at RCWMCH as and when the collection of information on each patient is complete.

b. Data will be captured and analyzed using SPSS statistics 20.

Expected outcomes of the study

a. Documentation of the number, characteristics and management of all cases referred to the CL service at DCAP by Red Cross Children's Hospital over the period 1 November 2011 and 31 October 2012.

b. Identification of perceived strengths and weaknesses of the current CL service as reported by staff at RCWMCH.

c. Demonstration of priority service areas for CL service development.

d. To act as a potential model of care for other pediatric CL teams across Southern Africa.

e. Identify mental health teaching and training needs at RCWMCH.

Dissemination of Results

Results will be made available to:

a. Hospital staff at RCWMCH and DCAP.

b. Department of Psychiatry, UCT.

c. Hospital managers responsible for funding posts.

d. Peer-reviewed journals for publication and conferences where results will be presented.

Duration of the project

The study duration will be approximately 18 months.

Challenges anticipated

Problems anticipated in part I include incomplete data collection on individual cases due to inadequate record keeping.

Problems anticipated in part II include:

a. Low numbers in survey completion and submission.

b. Survey data are the recollections and perceptions of the respondents and might not reflect their actual referral practices if a case-by-case account was made.

Project management

The PI will compile a list of referred cases and supervise the data collection. Data analysis will be performed by the PI. The results will be written up by the PI. The dissemination of results will be the responsibility of the PI. No budget is required for the study. The project will be supervised by Prof PJ de Vries.

Ethics

Ethics approval will be sought from the UCT, Department of Health Sciences Research and Ethics Committee. The superintendant of RCWMCH will be approached for permission for the study.

Ethical standards will be maintained by the following:

a. Justice will be considered by including all patients referred to the CL service, thereby also excluding bias and stigma.

b. Confidentiality will be maintained so as to ensure non-maleficence.

c. The protocol complies with the Declaration of Helsinki (2008) and the Department of Health: Ethics in Health Research: Principles Structures and Processes (2004).

Limitations

It may not be possible to extrapolate data to other centers in South Africa where resources may be more limited.

References

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2. Fritz G. Consultation-Liaison in Child Psychiatry and the evolution of Pediatric Psychiatry. Psychosomatics 1990; 31(1)85-90.

3. Ortiz P. General Principles in child liaison consultation service: a literature review. European Child and Adolescent Psychiatry 1997; 6(1)1-6.

4. Shaw R, Wamboldt M, Bursch B, et al. Practice Patterns in Pediatric Consultation-Liaison Psychiatry. Psychosomatics 2006; 47(1)43-49.

Annexure A: Consultation-Liaison Assessment Form

	Study number		
2	Date of birth		
3	Date of admission		
4	Date of referral		
5	Gender	5.1 5.2	Male Female
6.	Race	6.1 6.2 6.3 6.4	Black Colored Indian White
7	Income status	7.1 7.2 7.3 7.4 7.5 7.6	No income Less than R1000 R1000 to R29 999 R30 000 to R59 999 R60 000 to R99 999 R100 000
8	Who is the referring agent?	8.1 8.2 8.3 8.4 8.5	Social worker Consultant pediatrician Intern or registrar Nurse Other
9	What is the request for?	9.1 9.2 9.3 9.4 9.5 9.6 9.7 9.8 9.9 9.10 9.11 9.12 9.13 9.14 9.15 9.16 9.17	Conversion disorder Family problem Adjustment disorder Anxiety/depression evaluation PTSD evaluation Pseudoseizures Delirium Pre-transplant assessment Procedural anxiety Suicide risk evaluation Behavioral problem Abuse evaluation Evaluation of a parent Staff problems Medication assessment Psychiatric differential diagnosis Other
10	Who did the assessment?	10.1 10.2 10.3 10.4	Consultant Senior registrar Registrar Psychiatric nurse
11	How often was the patient seen?	11.1 11.2 11.3 11.4	Once Twice Three to five times Ongoing
12	Unit referred from	12.1 12.2 12.3 12.4 12.5 12.6 12.7 12.8 12.9 12.10 12.11	General pediatric ward ICU Trauma Unit S11 Short Stay Ward Renal Unit Diabetic Services Burns Neurology Outpatients Surgical Unit Other
13	Medical diagnosis	13.1 13.2 13.3 13.4 13.5	Head injury Other trauma Epilepsy Other Neurological Disorder GIT problems

		13.6	Diabetes
		13.7	Blood Disorder
		13.8	Renal problems
		13.9	Cardiac disease
		13.10	HIV
		13.11	Asthma
		13.12	Other pulmonary disease
		13.13	Overdose
		13.14	Other
14	Psychiatric diagnosis	14.1	Major Depressive Disorder
		14.2	Depressive Disorder NOS
		14.3	Adjustment Disorder with depressed mood
		14.4	Adjustment Disorder with anxious mood
		14.5	Generalized Anxiety Disorder
		14.6	PTSD
		14.7	Pseudoseizures
		14.8	Other Conversion Disorder
		14.9	Somatoform Disorder
		14.10	Suicidality
		14.11	Conduct Disorder
		14.12	Mania
		14.13	Selective Mutism
		14.14	Attachment Disorder
		14.15	ADHD
		14.16	Tics and Tourette's Disorder
		14.17	Autism Spectrum Disorder
		14.18	Child abuse
		14.19	Delirium
		14.20	Learning disability
		14.21	Other
		14.22	No psychiatric diagnosis
15	List psychiatric medications used	15.1	Antidepressant
		15.2	Antipsychotic
		15.3	Benzodiazepine
		15.4	Combination
		15.5	Other
		15.6	No medication prescribed
16	Psychiatric management plan	16.1	Diagnostic evaluation only
		16.2	Medication
		16.3	Psycho education: patient, family, staff
		16.5	Supportive counseling
		16.6	Individual psychotherapy
		16.7	Family therapy
		16.8	Behavior modification
		16.9	Cognitive behavioral therapy
		16.10	Relaxation
		16.11	Psychological testing
		16.12	Grief intervention
		16.13	Other
17	Case Outcome	17.1	Transfer to psychiatric facility
		17.2	Referral to outpatient psychiatric treatment
		17.3	Ongoing treatment within the CL team
		17.4	Follow up by the medical team
		17.5	Discharge
		17.8	Lost to follow-up
		17.9	No intervention required

Annexure B: Child and Adolescent Psychiatric Consultation-Liaison Survey

Please tick the appropriate box (tick)

What is your professional category?

Consultant Pediatrician	☐
Pediatric registrar	☐
SHO/Intern/Community Service Doctor	☐
Social worker	☐
Nurse	☐
Other (please specify):	☐

In which service area do you work? (Tick all appropriate boxes)

Trauma services	☐
ICU	☐
S11	☐
OPD	☐
Diabetic services	☐
Dermatology	☐
Neurology	☐
Burns	☐
General pediatrics	☐
Surgery	☐
Social work	☐
Physiotherapy	☐
Occupational therapy	☐
Teaching	☐
Other (please specify):	☐

How often have you used the psychiatric consultation- liaison service in the last 6 months?

More than 10 times	☐
Less than 10 times	☐
Once or twice	☐
Never	☐

What were your reasons for the referral? (Tick all applicable boxes)

Assessment for depression	☐
Assessment of anxiety	☐
Assessment for conversion disorder	☐
Assessment of behavioral disorder	☐
Assessment for suicide risk	☐
Delirium	☐
Pseudoseizures	☐
Evaluation of child or family's reaction to illness	☐
Counseling or support of patients and/or families	☐
Problems experienced by staff in dealing with a patient	☐

What has been the age range of the children that you have referred? (tick all boxes)

0-5 years	☐
5-10 years	☐
10-13 years	☐
Older than 13 years	☐

How important do you feel the following factors are in psychiatric consultation-liaison?

	Very important	Important	Not very important
Timeliness of reply	☐	☐	☐
Verbal feedback to the treatment team	☐	☐	☐
Participation in psychosocial rounds	☐	☐	☐
Participation in ward rounds	☐	☐	☐
Arrangement of psychiatric follow-up	☐	☐	☐
Availability of a counseling psychologist	☐	☐	☐
Availability of a Xhosa-speaking mental health professional	☐	☐	☐
Case- specific teaching	☐	☐	☐

How often do you think about referring to our service?

Often	☐
Occasionally	☐
Never	☐

What stops you from referring to our service?

Impression that there is no service	☐
Too much paperwork required in the referral	☐
Too difficult to access a clinician directly	☐
Feel it will be of no benefit	☐
Somebody else is responsible for making a referral	☐
Other (please specify):	☐

There is currently no dedicated trauma counseling service at Red Cross Children's Hospital. Do you feel that this would be a useful additional service?

Yes	☐
No	☐

What would you like us to give further teaching or training on?

Psychiatric disorders in children	☐
Psychiatric medication	☐
Breaking bad news to children and families	☐
Psychological therapies in child psychiatry	☐
Management of psychiatric emergencies	☐
Teaching or training around the specific case you have referred	☐

In what setting would you like to receive the teaching?

Academic lectures	☐
Small group teaching	☐
Individual case basis	☐

Any other comments?

Thank you!

Part B: Literature Review

Literature Review

Objectives of the Literature Review

The overall study aimed to describe consultation-liaison (CL) services offered by the Division of Child and Adolescent Psychiatry (DCAP) to Red Cross War Memorial Children's Hospital (RCWMCH) in Cape Town, South Africa. Given that RCWMCH is the only children's hospital in sub-Saharan Africa, we predicted that the literature on CL from Africa or from other low/middle-income countries would be very limited. We anticipated that our study might be one of the first to provide South African and African research in the area of pediatric CL. The aim was to describe the structure of the CL services in terms of multi-disciplinary team format, to identify domains of service provision and to highlight particular challenges facing psychiatric and pediatric teams who work in impoverished communities with specific pediatric illnesses and their associated psychopathologies, such as HIV or Tuberculosis.

In order to contextualize our proposed research, we therefore wanted to perform a literature review that would include a discussion of all relevant literature on the two areas of interest to this study – clinical presentations and organization of pediatric CL services. While the primary focus of our study and literature review was Africa and other low/middle-income settings, we opted at the outset to include all other available literature where appropriate.

Method

Literature search strategy

A search of Medline, PsychINFO, PsychArticles and PubMed was conducted. The following search terms were included; "consultation-liaison" AND "pediatrics" OR "children" OR

"adolescent". No quality criteria were used to justify inclusion. The only exclusion criterion was to exclude articles not published in English. All English language articles that considered aspects of a CL service in a hospital setting were therefore included. No time criterion for publication dates was set and all articles published at any point in time were included. The search term "Africa" was added to a secondary search to identify any relevant articles from the continent.

Results

Thirty-five articles were identified for potential inclusion. Twenty-eight articles were included in the final literature review, all listed in the reference list. Seven articles were excluded because the full articles could not be accessed through the University of Cape Town library services. Included amongst these six articles were two articles based on adult CL services in East Africa that were identified using the additional search term "Africa" which also yielded one article based on adult CL services in South Africa. Only one article was found that related to pediatric CL in an African setting. The paper by Hatherill *et al*[1] from DCAP at RCWMCH in South Africa discussed the diagnosis of delirium in children and proposed a treatment algorithm. As such the paper therefore described the clinical characteristics and management of a very specific subset of potential referrals to a CL service rather than a broader evaluation of CL services for children.

Interpretation of the literature

Introduction to pediatric CL services

Pediatric consultation-liaison (CL) comprises all consultations, liaison, diagnostic, therapeutic, support and research activities carried out by psychiatrists and other mental health professionals in pediatric wards.[2] Burket[3] defined pediatric CL as the process in which the child psychiatrist evaluates the patient, forms an opinion, and makes recommendations to the referring

pediatricians. The number of available studies characterizing the range of services provided by a pediatric CL team and the provision of pediatric CL services in low/middle-income settings is minimal[4,5]. Vythilingum and Chiliza[6] proposed that in low-income settings there may be a particularly high need for CL services. Co-morbid psychiatric and medical illnesses are associated with a greater likelihood of hospitalization or institutionalization, a greater likelihood of healthcare service use of all types and a greater impairment in quality of life.[6] This has significant economic consequences for patients (longer hospital stays, disability) as well as health care services (increased utilization of services).[6]

Authors writing about CL psychiatry in the adult arena either assume that child psychiatry issues are similar to, and therefore, subsumed under the general psychiatry rubric or ignore child psychiatry completely.[7] Advances within the field of pediatrics have brought new challenges to the mental well-being of children.[8] For example, technological advances in the ICU nursery mean that premature infants survive, giving rise to an increased likelihood of neurodevelopmental disorders associated with prematurity as well as immediate and longterm psychological changes for children and their families. Factors differentiating CL work with children from that of adults include the character of pediatrics as a discipline which emphasizes prevention and well-child care and the nature of the medical problems encountered.[7] A cardinal feature of pediatric CL is the inclusion of family systems. Piazza-Waggoner *et al*[9] highlighted the involvement of caregivers in the consultation and intervention emphasising the importance of addressing the psychosocial needs of caregivers in order to optimize their ability to participate meaningfully in health-related interactions and assist their children in adjusting to medical situations. Siblings are faced with numerous challenges including frequent separations from parents and disruptions to their daily routines.[7] In addition, admission to hospital is an experience

for children where the exposure to new stimuli, isolation from family and friends, painful procedures and the witnessing of other children with life-threatening illnesses is often traumatic.[2]

Developmental factors have specific relevance to liaison work. Children are not just smaller versions of adults. Both their physical and psychological characteristics show qualitative as well as quantitative differences from adults. Children's understanding of illness progresses through a number of stages, from believing that all illness comes about as badness or magic, through contamination and contagion theories, to a more adult view of causation.[10] Medical jargon, which can be confusing for adults, is a potent cause of confusion for children whose language and speech is at a different developmental level, and who may have their own vocabulary for body parts and functions which needs to be elicited to enable effective communication.[11] The developmental perspective needs to consider the child's age and temperament, their cognitive and emotional development and an evaluation of their capacity to understand and cope with the illness process. The severity of the child's reaction may be influenced by a range of factors including their age, the length of separation from family, the parents' availability to provide support to their child, the information and preparation given to the child and the organization of the ward towards a child-centered environment. Such factors complicate psychiatric evaluation but may also act as powerful resilient forces towards growth and recovery in the child or adolescent.[7,12]

Issues related to medical co-morbidity are important in child and adolescent psychiatry. Emotional and behavioural problems have been found to affect 18% to 20% of children in pediatric primary care practices and rates of emotional and behavioural disorders are likely to be higher than 20% in children with chronic illness.[4] Knap and Harris[4] discussed the risk factors in chronic illness in children. These included physical disability, pain frequency, single parent, low

family income, male gender, parent perception, brain dysfunction as a result of illness, and brain dysfunction as a result of treatment. Cottrell and Worrall[13] suggest the additional factors of duration and severity of illness, chronicity, visibility of associated disability, age at onset, interference with normal functioning, and the speed and effectiveness of medical diagnosis. Protective factors in the child include good academic performance, having a confidante, good friendships, positive self-esteem, and special competencies.

The organization of CL services: service models and components

The available literature on pediatric CL represents service descriptions from high-income and high resource settings. The lack of existing literature from low/middle-income settings does therefore not permit us to draw a comparison between services in high-income versus low-income settings. A discussion of the available literature is presented.

1. Service models in pediatric CL

Harden[14] discussed two models of organization of CL services. In the first model the psychiatrist responds to all consultations, completing the initial assessment, and thus serving a triage function. The key element identified in this model is the availability of the psychiatrist to discuss findings with the medical specialist. It is time and resource intensive and dependent on the availability of a consultant psychiatrist. The second model allows any clinical member of the multi-disciplinary team to respond to the consultation request which is then discussed with the team. The advantage of this model in comparison with the previous one is that it is time and resource efficient in the use of consultant psychiatrist time, however, medical specialists may be reluctant to deal with allied health staff and may view the psychiatrist as relatively inaccessible,

There is, therefore, a risk that the credibility of the service will be compromised. A further risk in such an approach includes potential differences in the clinical level of expertise of staff.[14]

Steiner presented a review of this organization as existing within five possible domains as shown in table 1.[8]

Table 1. Domains within CL services to pediatrics (adapted from Steiner *et al*[8])

Five domains within CL services to pediatrics	Clinical Examples
Psychiatric complications of chronic illnesses	Depression in diabetes
Psychiatric complications of acute illnesses	Delirium
Psychiatric complications of medical interventions	Traumatic reactions after transplantation
Psychiatric illness leading to pediatric morbidity	Anorexia Nervosa
Complications of coincidental psychiatric and pediatric co-morbidity	Compliance problems in an asthmatic child with oppositional defiant disorder

The MDT is integral to CL services. Fritz proposed that the ideal multi-disciplinary team (MDT) included a child psychiatrist with experience in pediatrics, psychopharmacology and systems theory, psychologists with experience in assessment, treatment, relaxation therapies, cognitive assessment and rehabilitation, and psychiatric nurses with experience in ward management techniques, staff support and therapeutic management.[7] The broad range of skills required by individual team members in an MDT in pediatric CL has progressed beyond what Fritz has proposed. For example, nurses are often involved in the provision of therapeutic services and psychologists may be responsible for the management of a ward. Colville[15] discussed the role of the psychologist in the intensive care unit and highlighted the range of clinical skills required

including direct intervention with families and children and consultation with other professionals. A CL psychologist would need to be able to develop rapport quickly in a situation of high tension, frequently with no previous knowledge of the child or family and may have the challenge of working with patients who are highly sedated, or unable to speak because of the ventilator tube.[15] Piazza-Waggoner *et al*[9] conducted an analysis of the practice patterns of an inpatient pediatric psychology CL service over the first 5 years of development. They identified that their most frequent interventions included cognitive-behavioural skills, relaxation training, problem solving and family training and even brief once-off sessions could be used for targeted interventions[9]. Watson[16] outlined the crucial role of the CL nurse in providing support and advice to nursing colleagues in the general pediatric setting who have 24-hour responsibility for the well-being and safety of patients.[16] Sharrock et al[17] assessed the impact of the introduction of a nursing position into an established CL psychiatry. Their findings demonstrated that the addition of the nursing role improved the access of general hospital patients to mental health care and provided valued expert assistance to staff in the provision of care to patients with complex problems and significant psychiatric comorbidity.[17] Black et al[18] highlighted the special role of the nurse working with children coming to terms with chronic conditions such as diabetes and cystic fibrosis.

2. Components of Pediatric CL

Cottrell and Worrall[13] described the ideal components of a pediatric CL service:

2.1 Clinical services including emergency services, psychosocial ward rounds, consultation on individual or groups of cases and joint work with pediatricians or other direct referrers.

2.2 The support of child health staff.

2.3 Teaching of trainees including medical undergraduates and post-graduates, nurses and other non-medical professionals.

2.4 Research conducted via joint research meetings and collaborative research.[13]

2.1 Clinical services

Clinical presentations are varied in pediatric CL.[19] Shaw *et al*[12] considered the range of services offered. Shaw proposed that services should include; diagnostic evaluation, individual psychotherapy, family and group therapy, psychiatric medication, behavioral modification, preparation for painful procedures, referral for outpatient treatment, transfer to psychiatric facility, referral to medical-psychiatry programs, psychological testing and psychoeducation.[12] Woodgate[20] stated that teams need to have expertise in problems that are not otherwise the bread and butter of generic work. For example, the assessment of the mental health of pediatric transplant candidates requires specific expertise. An understanding of the connections between physical and mental health symptoms as well as their specific management skills is essential. This involves a close appreciation of pediatric conditions and liaison with pediatric services.[20] Poorly resourced teams may not be able to provide similar comprehensive treatment options. Children and adolescents living in impoverished communities have an increased likelihood of exposure to traumatic events.[16] The experience of a severe trauma or life-threatening or terminal illness creates particular needs for the child, adolescent, family and the staff that care for them. Psychiatric staff may have to offer a wide range of psychological and other treatments including supportive counseling for parents, individual therapy for children, family therapy and support groups for staff.[21,22]

The relationship between CL teams and pediatric staff is important. Boris[23] stated that there is a high correlation between the quality of the relationships with physicians, trainees, and nurses, and the success of CL interventions. Key factors in the relationship include the ability of child psychiatrists to demonstrate an understanding of the key medical conditions and the complexities of the medical care. With particular reference to consultation to neonatal intensive care units, Boris[23] emphasized the need for psychiatrists to be aware of the medical team's constant battle with death, loss and the subsequent development of burnout in pediatric staff. Lewis[24] stipulated that collaboration is much more likely to occur when there are good relationships based on mutual respect and friendship between pediatrician and psychiatrist.

The decision to refer a case to a CL service is dependent on the knowledge base of medical personnel working with the child or adolescent. The Pediatric Inpatient Behaviour Scale (PIBS) is a 47-item nurse-completed measure of a child's behavior during medical hospitalization. It may be used by nurses and pediatricians to identify children in need of psychological consultation and to document the specific problems shown by a particular child in the hospital.[25] There are no other screening tools specific to this domain of practice.

2.2 Staff support

Knapp and Harris[4] emphasized the role of staff support in liaison work. Liaison work is frequently necessary in the care of a child with a devastating trauma where support for nursing staff is critical.[22] Koumans[26] defined the two major intensive care unit community stresses as the extraordinary intensity of emotion inherent in most interpersonal interactions and the rapid turnover in the patient population. The child psychiatrist may assist by facilitating expression of feelings and offering support, problem solving, or conflict resolution. [4, 27] The psychosocial ward

round is an integral part of a CL service. It is described as a teaching conference that is used to address cases that the child health staff have identified as difficult. Interpersonal issues between staff and parents are often the focus but it is also a good forum to elicit discussion from the rotating doctors and registrars about their clinical and emotional experiences. In intensive care settings and other critical care wards, a nursing stress group, held monthly, is recommended to address high levels of stress experienced by nursing staff.[28]

2.3 *Teaching*

Teaching activities are important tools in addressing the collaborative needs between professionals and to integrate medical and psychological aspects.[2] Woodgate and Garralda[20] emphasized the role of teaching to paediatricians, nurses and medical students. They identified that less training was associated with less joint working with child mental health professionals and recommended that careful thought needs to be given to where and how to prioritize pediatric training needs in this area.

2.4 Research

Research is an integral part of a CL service. Recent changes in CL research included a shift of focus from studies of children with a particular illness to a non-categorical approach that included children across illness groups, a shift in focus on the child alone to a focus on the child-in-the-family and a shift away from "deficit-based" evaluations towards a more positive approach focused on development and adaptation.[4] In addition, there is a shift towards understanding risk and protective factors.[4] Obstacles to research in pediatric CL psychiatry include the inadequacy of available psychiatric nomenclature, current diagnostic systems are not easily taught to or used by paediatricians thus limiting their participation in CL research and

developmental factors must be taken into consideration particularly when information is needed, often requiring multiple informants .[8]

Challenges for CL teams

Challenges that face CL teams in resourced settings may be different to those that confront teams in poorly resourced settings. Problems specific to a resourced service include the diversity and unpredictability of referrals rendering teams to a 'feast or famine' phenomenon of consultation requests.[12] Problems for teams in both settings include teams often becoming involved late in the treatment as referrals are often delayed, the clinical work may seem excessively tipped towards evaluation with too little opportunity for treatment, continuity and long term follow-up, short duration of hospital stays, lack of acceptance of CL work by hospital staff, inadequate staffing to meet the clinical need, inadequate staffing to provide supervision, difficulties recruiting staff and lack of administrative support.[7,12] Problems particular to poorly resourced teams are not specifically addressed in the literature reviewed.

Limitations of the available literature

This literature review did not identify any publications about pediatric CL in Africa or other low/middle-income settings. It is therefore not known what services exist, what service models may look like or whether similar services in low/middle-income settings have the same beneficial impacts on pediatric outcomes. In addition, no literature described the organizational structure or the clinical activities of such services. Finally, whilst the relationship between medical and psychiatric teams are crucial in any CL work, limited data were available that sought pediatric staff opinions regarding pediatric team wishes or desires and evaluation of CL services offered.

Considerations for further research

There is general support for further research in pediatric CL psychiatry. Steiner *et al*[8] identified the need for CL research in 1994 by stating that there are only a small number of individuals active in pediatric CL and even fewer who pursue research. Shaw *et al*[12] emphasized that CL is a growing aspect of psychiatric services in academic medical centers, providing training for psychiatry and psychology trainees, clinical care of children and families, and support for pediatric staff. Further study is needed to understand how to best support these important services within rapidly changing healthcare environments.[12] Piazza-Waggoner *et al*[9] identified more specific goals of CL research. Research on pediatric CL programs is necessary to enhance their ability to provide comprehensive care by providing some indication of which referral concerns may be specific to different medical populations and where clinical expertise might best be developed depending on these referral concerns. Wagner *et al*[19] suggest that the factors that influence the rate of referrals from various hospital areas requires further investigation. Cottrell and Worrall[13] emphasized the importance of the relationship between psychiatrists and pediatricians suggesting that the success or failure of a liaison service is likely to rest on the pediatrician's perception of its clinical efficacy. Therefore, an assessment of pediatrician's perceptions of a CL service would be useful research.

As stated in the introductory paragraphs of this review, our interest was to describe the structure of the CL services in terms of multi-disciplinary team format, to identify domains of service provision and to highlight particular challenges facing psychiatric and pediatric teams who work in impoverished communities. Strikingly the literature was very limited with essentially no information from Africa or other low/middle-income settings where the needs and values of CL services may arguably be even greater than in higher resource environments. No information was

available on the structure of a MDT, range of clinical referrals and models of service. The literature review therefore provided clear motivation for the proposed project to focus on the organization of a CL service in a low/middle-income setting such as a sub-Saharan African Children's Hospital and an assessment of child health staff perception of such a CL service.

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Part C: Publication-ready Manuscript

Pediatric consultation-liaison psychiatry: a description of the consultation-liaison service offered by a tertiary level children's hospital in Cape Town, South Africa.

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Abstract

Objective

The majority of existing literature on CL services to pediatrics is from services in high-income countries. At present, no research literature is available on psychiatric CL services to pediatrics in South Africa. The aim of this study was to describe the CL service offered to Red Cross War Memorial Children's Hospital (RCWMCH) by The Division of Child and Adolescent Psychiatry (DCAP) and the perceived satisfaction, and expectations of, child health staff with the CL service.

Methods

The study took place in two parts. A retrospective review of cases referred to DCAP from RCWMCH between November 2011 and October 2012 was conducted. A survey questionnaire was distributed to child health staff and the information received was analyzed.

Results

Major Depressive Episode (MDE) was the most common psychiatric diagnosis made. Only 38% of those referred for possible depression met clinical criteria for MDE. Risk factors for MDE included low socio-economic status and a medical diagnosis of chronic renal, cardiac or HIV illness. Survey results indicated that child health staff ranked; perceived accessibility to CL clinicians, the need for a psychologist and Xhosa–speaking mental health practitioners, a counseling service aimed at trauma-focused support of patients, and participation in psychosocial ward rounds as priority expectations.

Conclusion

The CL service offered by DCAP to RCWMCH was shown to be valued by child health staff. Results indicated a number of key directions for further training and service development. This study was the first to our knowledge to describe a pediatric CL service from Africa and other low/middle-income settings.

Introduction

Pediatric Consultation- Liaison (CL) comprises all consultations, liaison, diagnostic, therapeutic, teaching, support and research activities carried out by psychiatrists and other mental health professionals in pediatric wards.[1] There is a relative dearth of studies characterizing the array of services provided by pediatric CL teams. A number of scholarly reviews of the CL literature by adult psychiatrists have dealt with its historical roots, evaluation techniques, research, and important current issues.[2] Absent from these and related articles is any mention of the history, clinical approaches, organization, or problems unique to consultation-liaison in child and adolescent psychiatry.[2] Currently, no literature is available on pediatric CL services in low to middle income countries.

Factors differentiating CL work with children from that of adults include the character of pediatrics as a discipline which emphasizes prevention and well-child care and the nature of the clinical problems encountered.[2] The scope of pediatric CL also includes the assessment of family systems, the siblings' situation which is characterized by frequent separations from parents and disruptions to daily routines. Admission to hospital is an experience for children where the exposure to new stimuli, isolation from family and friends, painful procedures and the witnessing of other children with life-threatening illnesses, is often traumatic.[2] Working within pediatrics requires that a developmental perspective be maintained. It is important to recognize that the rapid physical and psychological changes that take place in a child's life will alter the manifestations of the disease. This complicates psychiatric evaluation but it may also be a powerful resilience force towards growth and recovery.[2] This dynamic developmental perspective needs to consider the child's age, their cognitive and emotional development and an evaluation of their capacity to understand and cope with the medical and illness process. The

severity of their reaction may be influenced by a range of factors including their age, the length of separation from their family, their prior experiences of separation, their personality, the parent's reaction, the information and preparation given to the child, the attitude of the hospital staff and the organization of the ward towards a child-centered environment. There are also the positive effects of new and different relationships.[3]

Assessment, diagnostic formulation and emergency response are core functions of a pediatric CL service.[1] Assessment and formulation are often the main request and the only possible intervention due to the short admission stays. In addition, a service should provide anticipatory interventions including pre-assessment and pre-treatment before a distressing procedure. Other aspects of a service include education, training, staff support and the promotion of research to sustain the field.[1] Steiner et al [4] reviewed the organization of Psychiatric CL services to pediatrics and suggest five possible domains of clinical practice (Table 1).

Table I. Domains within CL services to Pediatrics (adapted from Steiner et al[4])

Five domains within CL services to pediatrics	Clinical Examples
Psychiatric complications of chronic illnesses	Depression in diabetic patients
Psychiatric complications of acute illnesses	Delirium
Psychiatric complications of medical interventions	Traumatic reactions after transplantation
Psychiatric illness leading to pediatric morbidity	Anorexia Nervosa
Complications of coincidental psychiatric and pediatric co- morbidity	Compliance problems in an asthmatic child with oppositional defiant disorder

Harden outlined two typical models of CL service organizations. In the first model the psychiatrist responds to all consultations, completing the initial assessment, and thus serving a triage function. The key element identified in this model is the availability of the psychiatrist to discuss findings with the medical specialist. It is time and resource intensive and dependent on the availability of a consultant psychiatrist. The second model allows any clinical member of the multi-disciplinary team (MDT) to respond to the consultation request and conduct an initial assessment that is then discussed with the team. The advantage of this model is that it is time and resource efficient in the use of consultant psychiatrist time but medical specialists may be reluctant to deal with allied health staff and may view the psychiatrist as relatively inaccessible. There is, therefore, a risk that the credibility of the service will be compromised. A further risk in such an approach includes potential differences in the clinical level of expertise of staff.[5] A multi-disciplinary framework is thought to be the most effective working model for liaison. Needless to say, commitment from professionals in pediatric, psychiatric and psychological disciplines are essential to its success.[6] The ideal MDT includes a child psychiatrist, psychiatry trainee, psychologist and psychiatric nursing staff. An understanding of the connection between physical symptoms, health problems and mental health as well as a close appreciation of pediatric conditions and liaison with pediatric services is essential.[7] The relationship between CL teams and pediatric staff is important. There is a high correlation between the quality of the relationships with physicians, trainees, and nurses and the success of CL interventions.[8]

Very little is known about the provision of CL services within low to middle income countries where resource allocation may be a significant obstacle to service provision. In a recent review of all the available literature on pediatric CL, only one paper was identified from Africa and it described the clinical characteristics and management of a specific syndrome rather than a

broader evaluation of CL services for children.[9] Therefore, pediatric CL services are yet to receive the necessary recognition and support.

No published information is available on existing pediatric CL teams in South Africa. In preparation for this study, we contacted various centers across South Africa to obtain informal information relevant to the services being offered. Email feedback from 3 centers in the Western Cape, Free State and Gauteng provinces (Dr Anusha Lachman, Dr Lynda Albertyn and Prof Richard Nicol) suggested that pediatric CL MDTs usually include a child psychiatrist, specialist registrar and a psychologist. Not all teams included a psychiatric nurse. The number of cases seen per month ranged from 10 to 20 and the range of clinical scenarios assessed included mood and anxiety disorders, medication non-compliance, HIV-related psychiatric disorders, conversion disorders, delirium and behavioral problems in children.

Red Cross War Memorial Children's Hospital (RCWMCH) in Cape Town is a tertiary level hospital providing specialist care to children from across South Africa and Africa. The aim of this study was a) to describe the referral process, assessment, diagnosis and management of all cases referred to the Division of Child and Adolescent Psychiatry (DCAP) CL service from RCWMCH over the period of 1 year and b) to survey the perceived satisfaction with and expectations of child health staff of the current CL service. DCAP is the child and adolescent psychiatry division of RCWMCH and UCT. The CL team offered by DCAP at the time of the study consisted of a child psychiatrist and a sub-specialist registrar in child psychiatry who, cumulatively, offered 16 hours a week towards the CL service. Registrars in psychiatry assisted with emergency referral assessments. The service included weekly psychosocial rounds on the intensive care (ICU) and renal units as well as the assessment and management of individual referrals.

Methods

Case review

A retrospective review was conducted of the case records of all patients referred to the CL service at DCAP from RCWMCH. The relevant data was entered into a structured data sheet by a single investigator (TH). The review covered a period of 1 year between 1 November 2011 and 31 October 2012. Each case was assessed in terms of age, gender, race, family income status, referring agent, reason for referral, frequency of case contact, referral unit, medical diagnosis, psychiatric diagnosis, psychiatric medication prescribed, treatment provided and case outcome. These topics were selected as primary indices indicative of each individual case and were based on the PI's clinical judgment.

Child health staff survey

A survey questionnaire was designed to collect information about staff perceptions of the CL service. Questions were based on a similar set of questions compiled by Burket and Hodgin[10] and on the PI's clinical judgment. It was not piloted. The questionnaire contained 12 questions and was designed for rapid completion (in less than 5 minutes). Ten questions were multiple-choice in format, 2 questions required written comments and 1 required rank ordering. Included in the survey were questions designed to assess the frequency of consultation requests, identification of patient age groups for which consultation was most frequently requested, the reasons for consultation requests, factors preventing referrals, opinions on a dedicated trauma counseling service, potential educational topics and settings and a determination of the importance of varying factors within a liaison service. Staff members were requested to complete the survey by hand

whilst attending a regular RCWMCH academic meeting. In addition, staff were approached on an individual basis by the principal investigator (PI). Questionnaires were immediately returned to the PI.

Statistical analysis

The data from the case reviews and survey questionnaires were analyzed using SPSS version 20 with statistical advice from the UCT Faculty of Health Sciences Biostatics Team.

Ethical approval

Ethics approval was granted by the Faculty of Health Sciences Human Research Committee (HREC REF: 473/2012). Retrospective, anonymized case review did not require informed consent. All child health staff who participated in the survey were provided with information about the study and provided informed consent.

Results

Retrospective case review

All cases referred to the DCAP CL service between November 2011 and October 2012 were reviewed. The medical records of a total of 88 cases were identified. A summary of the case review data is presented in table II. Demographic findings indicated a predominance of male patients with equal representation of Black and Coloured patients but a minority of White patients. The most common referring professionals were social workers and junior ward doctors. An assessment for depression was the most common request followed by requests for staff support and evaluations of possible Conversion Disorders, psychopathology in a parent, Post

Traumatic Stress Disorder, Adjustment Disorders and Child Abuse. The category of 'other assessment requests' included family problems, attachment difficulties, psychoeducation and evaluations for anxiety, suicide risk and acute stress reaction. The majority of assessments were performed by the sub-specialist registrar. Approximately a third of patients were assessed only once and another third were consulted between 3 and 5 times. Most referrals came from the ICU, general pediatric wards, renal and burns units and the most common medical diagnoses in referred patients were burns, renal disease, trauma and HIV-related illness. The category of 'other medical diagnoses' included diplopia, porphyria, organophosphate poisoning, transverse myelitis, substance abuse and gastro-intestinal illness. Co-occurring medical diagnoses were not captured due to complexity. In approximately half of the referred cases (51%) the clinical evaluation did not identify a psychiatric diagnosis. Where a diagnosis was made, Major Depressive Episode (MDE) was the most common diagnosis. The category of 'other psychiatric diagnoses' included acute stress disorder, delirium, ADHD, attachment disorder and psychological disturbance secondary to HIV infection. In 77% of cases no psychiatric medication was prescribed. The management in a third of cases included a diagnostic evaluation only, the remainder of cases receiving psychoeducation or supportive counseling as the sole intervention. Most cases were discharged but a small percentage was referred for follow-up by the medical team or psychiatric outpatient services.

Table II. Summary of the retrospective case review data

Gender	Male 47(54%)	Female 48(46%)						
Race	Black 40(46%)	Coloured 40(46%)	White 7(8%)					

Referring agent	Social Worker 36(41%)	Consultant 11(13%)	Ward Doctor 35(40%)	Nurse 3(4%)	Physiotherapist 2(2%)			
Assessment request	Depression 35(40%)	Staff support 9(10%)	Pseudoseizures / Conversion Disorders 9(10%)	Evaluation of a parent 8(9%)	PTSD 5(6%)	Adjustment Disorder 4(5%)	Child abuse 3(4%)	Other 14(16%)
Assessor	Consultant 34(40%)	Senior Registrar 43(50%)	Registrar 10(10%)					
Frequency of consultations	1 (37%)	2 (20%)	3-5 (30%)	>5 (12%)	Ongoing (1%)			
Referral unit	ICU 27(30%)	General Pediatrics 18(21%)	Renal Unit 14(16%)	Burns unit 11(13%)	Emergency Unit 10(12%)	Trauma Unit 4(5%)	Surgical unit 2(2%)	Neurology 1(1%)
Medical diagnosis	Burns 27(32%)	Renal disease 15(17%)	Trauma 13(14%)	HIV-related Illness 9(10%)	Epilepsy 3(4%)	Cardiac disease 3(4%)	Genetic syndrome 3(4%)	Other 12(15%)
Psychiatric diagnosis	No psychiatric Diagnosis 44(51%)	MDE 15(17%)	Other 8(9%)	Adjustment Disorder Depressed Mood 7(8%)	Adjustment Disorder Anxious Mood 4 (5%)	Pseudo-seizures 3(4%)	ASD 2(2%)	Child Abuse 2(2%)
Psychiatric medication	Anti-depressant 20(23%)	No medication 67(77%)						
Management	Diagnostic Evaluation only 28(36%)	Psycho-education 20(23%)	Supportive Counseling 14(16%)	Individual Psycho-therapy 13(15%)	Medication 9(10%)			
Case Outcome	Discharge 60(70%)	Follow-up by medical Team 12(14%)	Psychiatric outpatient follow-up 8(9%)	Lost to follow-up 4(5%)	Ongoing Treatment By CL team 2(2%)			

Given that the most frequent reason for referral was depression, we explored the features of patients referred for an assessment of depression and the characteristics of those who received a diagnosis of depression separately. The features of those patients referred for an assessment of depression are listed in table III and those diagnosed with a MDE are listed in table IV. Salient features of cases referred for an assessment of depression included being of Black race, having an income of less than R1000.00 per month (equivalent to ~US$100/month), being referred from

the general pediatric ward, ICU, renal or burns unit and having a medical diagnosis of renal disease, HIV, or burn injury. Features of cases diagnosed with a MDE included being of Black race, having no income, being referred from the general pediatric ward and having a diagnosis of renal, cardiac disease or HIV infection.

Table III. Features of cases referred for an assessment of depression (n=39)

Racial group	Black (58%), Coloured (32%), White (10%)
Income status per month	No income (32%), <R1000 pm (37%), R1000-R5000pm (24%), R5000-R10000pm (5%), R30000-R60000 (2.6%)
Referral unit	General Pediatrics (32%), ICU (29%), Renal Unit (18%), Burns (18%)
Medical diagnosis	Renal disease (21%), HIV (18%), Burns (18%), other (24%)

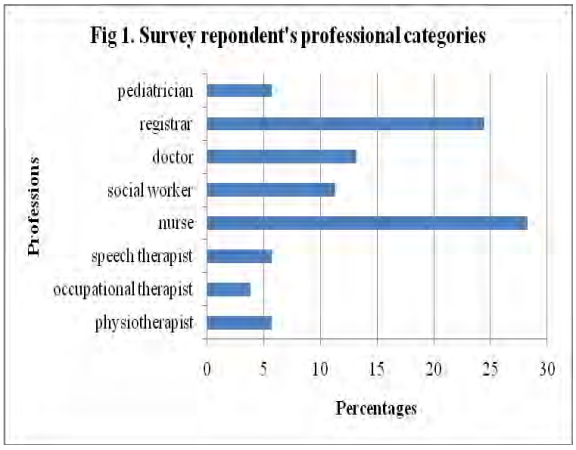
Table IV. Features of cases diagnosed with a Major Depressive Episode (n=15)

Racial group	Black (67%), Coloured (20%), White (13%)
Income status per month	No income (53%), <R1000 (27%), R1000-R5000 (13%), R5000-R10000 (7%)
Referral unit	General Pediatrics (47%), ICU (27%), Renal Unit (20%), Burns (6.7%)
Medical diagnosis	Renal disease (27%), Cardiac disease (20%), HIV (20%), Burns (7%), Trauma (7%), TB (7%), Other (13%)

Survey

Fifty-four child health staff members from the RCWMCH completed the survey form. Figure 1 illustrates the range of professionals who completed the survey and figure 2 indicates the service areas represented by these professionals. Nurses and pediatric registrars represented 52% of respondents. Registrars made referrals at the request of consultants. Medical officers (non-training grade doctors) are represented by the term 'doctor'. Most respondents worked in the ICU, general pediatric and trauma units. Thirty-four percent of respondents had referred a case to

the CL service on one or two occasions in the preceding 6 months, 28% had never referred a case, 24% had made a referral less than 10 times and 14% had referred more than 10 times in the preceding 6 months. Sixty-six percent of respondents indicated that they had made a referral for a child aged between 5-10 years; sixty percent for a child aged 10-13 years, 28% for a child aged 0-5 years and 20% indicated that they had referred a child older than 13 years.



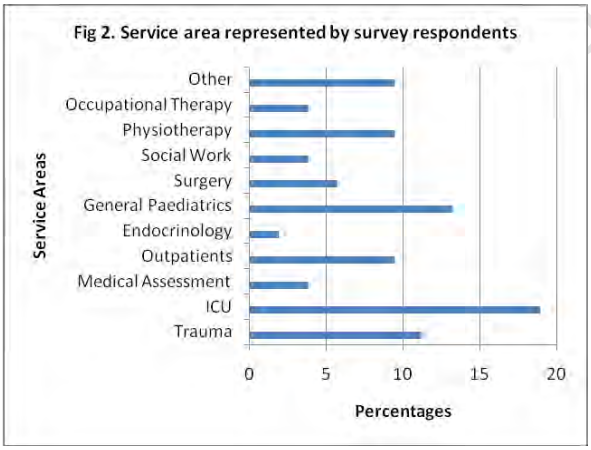


Fig 1 and 2. Professional categories and service areas represented by survey respondents

Figure 3 illustrates the reasons for referral. The most common requests were for an evaluation of depression, anxiety or behavioural disturbance, requests for supportive counseling or evaluation of a child or family's reaction to illness.

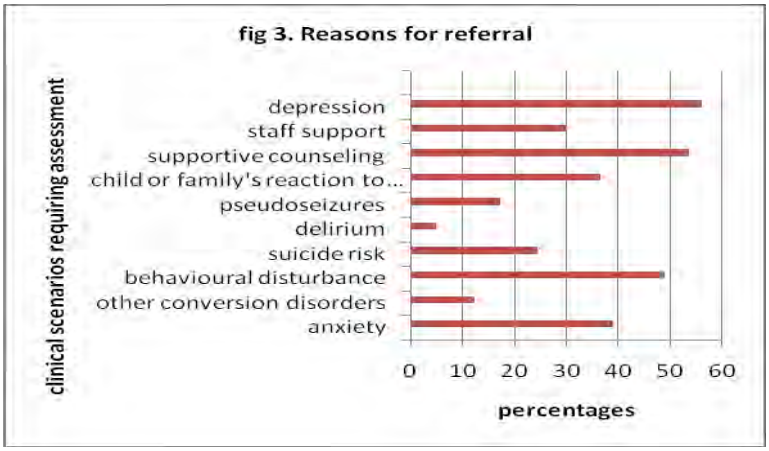


Fig 3. Reasons for referral to CL services as indicated by survey respondents

Factors that impaired the referral of cases to the CL service included; difficulty accessing a clinician directly, not having the capacity to refer and the perception that too much paperwork was required in the referral process. Figure 4 shows staff ranking of the importance of varying features of a pediatric CL service.The availability of a psychologist is viewed as the most important feature and participation in ward rounds is the least important feature.

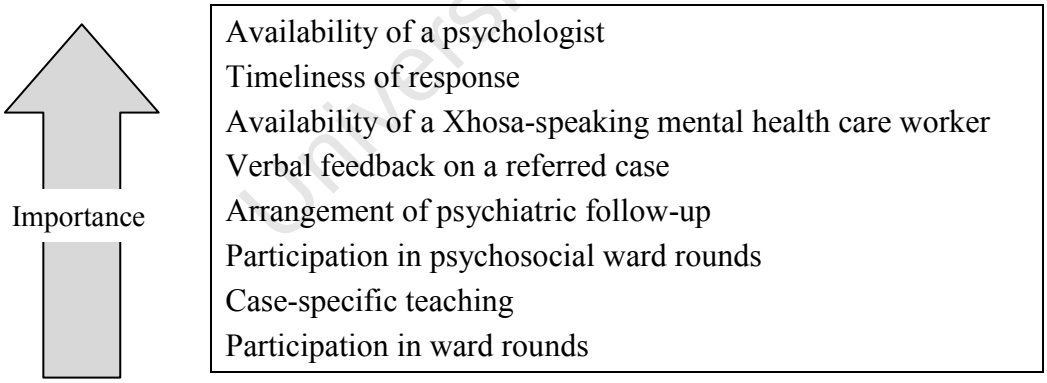


Fig 4: Ranked importance of features of a pediatric CL service

Ninety-eight percent of respondents felt that a dedicated trauma-counseling service would be of benefit. The most important topics for teaching included breaking bad news to families (72%), psychiatric disorders of childhood (68%) and teaching on psychiatric emergencies (48%). Topics

felt to be least important for teaching included psychotherapy in children (38%) and teaching on psychiatric medication (32%). The settings preferred for teaching were small group teaching (64%) and academic lectures (54%).

Discussion

This study was a description of a child and adolescent psychiatry CL service in a children's hospital in the Western Cape, South Africa. Over the course of 12 months, the CL team consisting of a child psychiatrist, sub-specialist registrar and supported by general psychiatry registrars who assessed pediatric casualty cases, provided CL services to 88 young people. Components of this liaison service included responses to emergency referrals, psychosocial ward rounds (ICU and renal unit), and consultation on individual cases and staff support (ICU). The team predominantly offered brief interventions primarily focused on diagnosis and assessment. The vast majority of children and families referred lived in economically deprived communities. Referrals were predominantly made by social workers, which may reflect the pivotal role that social workers play in the psychosocial management of medically ill children in RCWMCH, and junior doctors who carry out referral decisions made on consultant ward rounds. Referrals came most frequently from the general pediatric wards, followed by the ICU, renal and burns units. The presence of a psychiatrist in a weekly psychosocial ward round on the ICU and renal unit raises the awareness of mental health concerns in patients and is associated with increased referrals. Children with chronic illnesses are generally twice as likely to have psychiatric disorders as healthy children.[11] Consistent with this general principle, children with HIV, renal and cardiac diseases were more likely to be referred to our CL service. The range of underlying medical diagnoses in referred cases was broad. Injuries including burns, head injuries and other trauma represented approximately a third of cases. The predominant referral request was for an

assessment of depression. The profile of patients who are at a particular risk for development of a MDE are Black children living in homes where there is no income and who have chronic medical illnesses such as renal, cardiac disease or HIV infection. Comparing the information on patients referred for an assessment of depression as opposed to those who receive a diagnosis of an MDE indicates that children coming from extremely impoverished homes are at particular risk for depression and high levels of concern about the possibility of depression in burns victims does not necessarily correlate with actual diagnoses of MDE. Rates of emotional and behavioral disorders are likely to be higher than 20% in children with a chronic illness.[12] The rates of diagnosed MDE in this pediatric population were high (17%). In this study, the number of cases referred for a diagnostic assessment of depression was approximately double the number of cases which eventually received a confirmed diagnosis of a MDE. There are many possible factors leading to this 'over-referral' for possible depression. These could include a lack of knowledge skill in staff, a reflection of the severity and chronicity of the pediatric illness, the absence of family support, the severity of traumatic injury, the psychological response of family members, the circumstances surrounding the admission, the length of admission and the level of psychological distress present in the staff working with the patient. The introduction of a screening tool for depression to be used by ward medical staff prior to referral may be beneficial. The Pediatric Inpatient Behaviour Scale (PIBS) is a 47-item measure of the behavior of hospitalized children which provides quantitative broad information about child behaviors in hospital. It may be used by nurses and doctors to identify children in need of psychological consultation and to document specific problems shown by a particular child in the hospital.[13]

The use of psychiatric medication was minimal. Citalopram, a Selective Serotonin Reuptake Inhibitor (SSRI) was the only medication prescribed and was used for the treatment of anxiety or

depression in 23% of referred cases. Psychoeducation and short-term therapeutic interventions including supportive counseling of patients, family and staff were important components of this brief intervention service. This may reflect upon of the limitations of the staffing of the CL team and management plans may have included more therapeutic treatment alternatives if appropriately trained professionals were available. In the assessment of case outcomes, further limitations of the service were identified because only a small percentage of cases were offered further psychiatric outpatient treatment due to the lack of a specific CL follow-up service and follow-up by a medical team was often used as an alternative ongoing treatment strategy. This may represent an opportunity for shared care protocols or an extension of the CL service to include a follow-up clinic or combined clinic with other pediatric services. The cases described as 'lost to follow-up' are patients referred by the emergency service with a diagnosis of pseudoseizures. Following a brief initial medical assessment, patients were discharged before comprehensive investigations could be performed. A close liaison relationship with emergency staff would ensure that these children are actively investigated for an organic cause in addition to investigations of a psychological nature prior to discharge, reducing the time needed for diagnosis and increasing the likelihood of effective treatment.[11]

Survey respondents included medical and non-medical child health staff representing a range of service areas. Thirty-four percent of respondents had referred to the CL service on one or two occasions in the past 6 months as opposed to 30% of respondents who had made no use of the service. Reasons for referral emphasized assessments for depression, anxiety, behavioral disturbance, evaluation of a child or family's reaction towards illness, counseling of a child or family and support of staff in dealing with a patient. The strong emphasis on the need for psychological support for patients, families and staff is noted and careful consideration needs to

be given to the psychological needs of a children's hospital dealing with impoverished communities where primary care services are poorly established.

Timeliness of response (attending to referrals within 24 hours), verbal feedback on referred cases and the arrangement of psychiatric follow-up were emphasized as important expectations of an effective CL service. Xhosa is the African language spoken in the Western Cape and almost half of the referred cases were Xhosa-speaking children. Child health staff confirmed that both the availability of a psychologist and a Xhosa-speaking mental health practitioner were among their top priorities for an effective CL service and any expansion of the service should need to take this into consideration. Further considerations for development include a trauma counseling service given that ninety-eight percent of survey respondents were in support of the establishment of such a dedicated service at the hospital. Factors that prevented staff from referring patients included; a perceived difficulty in accessing a CL team clinician directly and, in some cases, nursing staff, occupational and physiotherapists were unable to make referrals as this responsibility falls upon the ward doctor or consultant. Changing communication within the medical teams may facilitate the referral of potential patients. One of the components of an ideal liaison service is teaching to medical students and postgraduates, nurses and other non-medical professionals. The survey indicated a strong need for teaching. Topics emphasized included breaking bad news to families, psychiatric emergencies and the broad topic of psychiatric disorders of childhood. Training around the appropriate and inappropriate psychological or pathological responses to admission and medical illness is recommended. Survey feedback suggested that teaching should preferably take the form of academic lectures and small group teaching.

As indicated from the responses from the ICU staff, a successful and integral management strategy available to a CL team is the use of a psychosocial ward round. This is a scheduled weekly meeting that includes the full team involved in patient care, aimed at the sharing of information, the formulation of behavior, mutual staff support, the processing of emotional content of the work and the creation of an open forum for decision-making discussions.[14] This is particularly useful in ICU where the impact of the emotional reactions of staff towards critically ill patients in their care and on the overall functioning of the unit have been well documented. These reactions include over-identification with the patients' plight, helplessness experienced around an unpredictable course, and repeated grief responses over both current and previous losses.[14]Extending the current service to offer a similar regular meeting to other units will allow the CL team to perform numerous functions. It will increase the awareness of the psychological needs of hospitalized children, allow for the discussion of possible cases for psychiatric assessment and provide opportunities for both case-specific teaching and staff support.

Table V The perceived strengths and weaknesses of the CL service

Factors that are useful in the current CL service	Factors that should be improved in the current CL service
• Weekly psychosocial ward rounds • Timeliness of response to referrals • The identification of high risk children as those children who are Black, live in impoverished circumstances and have HIV infection, renal or cardiac disease • Psycho education and short-term therapeutic interventions are effective	• Staffing limitations. The addition of a Xhosa speaking mental health professional and/or a psychologist is essential • A CL follow-up service should be developed • A shared protocol on the management of Pseudo seizures in children should be developed • There is a need for the further consideration of the psychological needs of patients, family members and staff at RCCWMH. The provision of a counseling service should be considered. A specific Trauma counseling service should be developed. • Verbal feedback on cases should be increased • Teaching on CL related issues needs to be increased.

In summary, the case review highlighted the economic deprivation of the population served by RCWMCH and the associated high rates of depression amongst children with chronic medical illnesses. The psychological needs may be greater in this population group which emphasizes the importance of counseling and psychological services within CL teams in low/middle-income countries. The survey highlighted the importance to child staff of a CL service, and identified a number of factors to consider in future service delivery or development. These included ease of accessibility to clinicians, the need for a psychologist and counseling service aimed at trauma-focused support of patients, parents and staff, the importance of skilled psychiatric nursing staff and the value of psychosocial ward rounds.

Limitations of the study

The literature review performed may have missed important or highly relevant service information about Child and Adolescent CL, and we acknowledge that there may therefore be examples of good practice in low/middle income settings that we were not aware of. Information gathered for this study was collected only on those cases that were recorded as formal referrals. Cases referred by the pediatric casualty unit and assessed by the registrars were not documented and therefore the data on these cases was not included. CL cases that were referred to general child psychiatry outpatients were also not included. It is therefore possible that inadequate documentation of referrals may have caused referrals to be omitted in the retrospective case review. However, we suspect that only a handful of cases may have been missed through omission, as the primary author (TH) also kept a contemporaneous training record of cases. While the majority of staff surveys were completed during a group session, it is possible that distribution of survey questionnaires to individual staff members by the PI may potentially have led to some reporter bias in completed questionnaires. The use of multiple-choice questions

provided a classification of the answers put forward by the PI but may have limited the opportunity for respondents to explore other perceptions of the service. The use of a focus group prior to survey questionnaire compilation could potentially further have enhanced the survey in identifying key areas for consideration. RCWMCH is a Hospital that caters for children and selected adolescents who are managed as chronic patients. This study is therefore limited in its capacity to provide adequate comment on CL issues related to adolescents.

Conclusion

CL services are perceived as effective and are valued by both referring professionals and parents of children referred for psychiatric consultation.[3] The direct benefits of CL intervention include improved medical outcome, reduction in healthcare costs, reduction in length of hospital stay and the reduction of costs associated with nonadherence.[3] Research into CL services within the South African context allows for the further development of services and expands on the existing knowledge of the field. This may support the development of similar services in other low to middle income countries. The study showed that the CL service provided by DCAP to RCWMCH was an important and valued service covering a broad range of pediatric subspecialist areas and strong support was provided to continue the service. Future developments to the service should consider the addition of a psychologist and a Xhosa-speaking mental health practitioner, provision of an outpatient and combined follow-up services, psychosocial ward rounds on other sub-specialist units and opportunities should be created for teaching at various levels. The addition of a trauma counseling service should also be an important consideration for RCWMCH and other hospitals with similar patient populations.

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Appendices

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14 September 2012

HREC REF: 473/2012

Dr T Henderson
c/o Prof P de Vries
Department of Psychiatry
Division of Child and Adolescent Psychiatry
46 Sawkins road
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Dear Dr Henderson

PROJECT TITLE: PAEDIATRIC CONSULTATION - LIAISON PSYCHIATRY: A DESCRIPTION OF THE CONSULTATION - LIAISON SERVICE OFFERED BY THE DIVISION OF CHILD AND ADOLESCENT PSYCHIATRY TO RED CROSS CHILDREN'S HOSPITAL

Thank you for addressing the issues raised by the Human Research Ethics Committee.

It is a pleasure to inform you that the HREC has formally approved the above mentioned study.

Approval is granted for one year till the 15 September 2013.

Please submit a progress form, using the standardised Annual Report Form, if the study continues beyond the approval period. Please submit a Standard Closure form, if the study is completed within the approval period.

Please note that the ongoing ethical conduct of the study remains the responsibility of the principal investigator.

Please quote the HREC. REF in all your correspondence.

Yours sincerely

PROFESSOR M BLOCKMAN
CHAIRPERSON, HSF HUMAN ETHICS

Federal Wide Assurance Number: FWA00001637.
Institutional Review Board (IRB) number: IRB00001938

«Ariefdien

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18 October 2012

DR T HENDERSON
SENIOR REGISTRAR
DEPT CHILD and ADOLESCENT PSYCHIATRY
RMH

Dear Dr Henderson,

RESEARCH

Approval is hereby granted to conduct the research at the Red Cross War Memorial Children's Hospital.

Yours faithfully,

DR T A BLAKE
Chairperson
Hospital Research Review Committee
RCWMCH

African Journal of Psychiatry (AJOP)

Material submitted for publication in the AJOP is accepted on condition that it meets the requirement of the Editor-in-Chief. The publisher reserves the copyright of the material published. All authors must give consent to publication, and the AJOP does not hold itself responsible for statements made by contributors. The Journal's primary aim is the publication of review and original articles, case reports and letters to the editor aimed at specialist mental health care and other professionals working in the neurosciences as well as primary care practitioners. All material will be sent for peer review.

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2. All abbreviations should be spelt out when first used in the text and thereafter used consistently.

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7. A clear statement on ethical issues in clinical and animal research must be provided; conflict of interests and patient confidentiality issues must be indicated.

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- Substantial contributions to conception and design, or acquisition of data, or analysis and interpretations of data.

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- Final approval of the version to be published.

Those, and only those who meet all three of the above stipulations, can be named authors, while those who meet only some of the requirements or otherwise facilitate the research by contributing to funding, data collection, editorial work, etc. should be named in the 'Acknowledged'section.

Accordingly, multi-authored papers need a declaration of relative contribution.

Illustrations

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Peter S. Acute hamstring injuries. Am J Sports Med 1994; 12(7):395-400.

Book references should be set out as follows:

1. Williams G.Textbook of Sports Medicine. 2nd Edition: Butterworth, 1989: 101-104.

2. Vandermere P, Russel P. Biomechanics of the hip joint.In:Nordien PE. Jeffcoat A, eds, Clinical Biomechanics. Philadelphia:WB Saunders, 1990:472-479.

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All manuscripts and correspondence should be emailed to: Professor CP Szabo, Christopher.szabo@wits.ac.za