Assessing the needs of pregnant women and mothers with severe mental illness: the psychometric properties of the Camberwell Assessment of Need – Mothers (CAN-M)

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Abstract

There is an absence of standardized validated instruments to assess the complex needs of pregnant women and mothers with severe mental illness. We aimed to develop a standardized assessment of need for pregnant women and mothers with severe mental illness. Staff and service users were asked to identify relevant domains of need. Professional experts and service users were then surveyed and asked to rate the importance of the domains of the Camberwell Assessment of Need – Mothers version (CAN-M). Reliability was established using 36 service user–staff pairs. Concurrent validity was assessed with the Global Assessment of Functioning. Inter-rater reliability (concordance) coefficients for unmet needs were 0.93 (95% confidence interval 0.89 to 0.98) (service users) and 0.83 (95% confidence interval 0.73 to 0.94) (staff); test–retest reliability coefficients were 0.91 (95% confidence interval 0.86 to 0.97) and 0.85 (95% confidence interval 0.73 to 0.96), respectively. Relevant CAN-M domains correlated with the Global Assessment of Functioning-symptom (Spearman's r correlation coefficient = −0.36, 95% confidence interval = −0.62 to −0.04, p = 0.05) and Global Assessment of Functioning-disability subscales (Spearman's r correlation coefficient = −0.52, confidence interval = −0.73 to −0.23, p < 0.01).

We conclude that the CAN-M is a reliable and valid instrument for assessing the needs of pregnant women and mothers with severe mental illness. Copyright © 2008 John Wiley & Sons, Ltd.

Key words: women, needs assessment, mental disorders

Introduction

There is increasing recognition of the importance of gender sensitive services (e.g. Joseph et al., 1999; Miller and Finnerty, 1996) and the UK Department of Health in particular has prioritized appropriate service delivery for mothers with severe mental illness (SMI) (Department of Health, 2002, 2003). There remains, however, an absence of standardized assessment tools to assess the complex social, health and psychological needs of

mothers with SMI. The Camberwell Assessment of Need (CAN) (Phelan et al., 1995) is an established instrument which assesses the needs of adults with SMI, and has been successfully modified for several patient groups including people with learning disabilities (Xenitidis et al., 2003), patients with a forensic history (Thomas et al., 2003), and the elderly (Orrell and Hancock, 2004). This study aimed to develop the Camberwell Assessment of Need – Mothers version

(CAN-M) for the assessment of needs in pregnant women and mothers with SMI. We aimed to identify new domains of need for this patient group and investigate whether these domains were reliable and valid.

Method

The development of the CAN-M

The structure, format and coding algorithm of the original CAN was retained in the CAN-M. A key aspect of the CAN is that it can be rated by staff or service users. All versions of the CAN include basic need domains such as accommodation and food. The CAN was developed for patients with SMI which is defined here as a psychotic disorder or chronic non-psychotic mental disorder. Principles of the CAN were used to guide the development of this instrument, namely that the CAN-M:

- has acceptable reliability and validity;
- is brief and suitable for use by a diverse range of professionals;
- incorporates both service user and staff perceptions of need;
- no formal training is necessary;
- measures met and unmet needs;
- is suitable for both routine clinical practice and research.

Three versions of the CAN-M have been developed. These are:

(1) CAN-M-S, a short one page version suitable for routine clinical or research use.
(2) CAN-M-R, a full research version which includes additional sections on level of support received from family/friends, level of support received from health and social services, and the level of support required, and a section on the respondent's satisfaction with the type and amount of help received to address their needs.
(3) CAN-M-C, a full clinical version, which includes additional sections on help received from family/friends, help received from health and social services, and the level of support required. The final section records the user's perceptions about the domain and the staff care plan.

All versions of the CAN include basic need domains such as accommodation and food. For each domain the

goal is to establish whether the service user has any difficulties, and, if they do, then to establish what level of help they are getting and needing (see www.iop.kcl.ac.uk/prism/can for details of domains of generic CAN). Each domain contains suggested questions/prompts e.g. for the accommodation domain patients are asked 'Do you have a place to live?', and the instrument reminds the rater that for no need to be rated the accommodation should be appropriate, secure and child safe. Patients are rated as either having no need, i.e. they have no problems at all in the domain; met need, i.e. they have no or moderate problems in the domain because of help given; or an unmet need, i.e. a serious problem irrespective of any help given. Needs can also be rated as not known or not applicable (e.g. pregnancy domain in mothers with teenage children and no current pregnancy).

Identification of relevant domains

Service users in contact with inpatient or community mental health services were invited to take part in this study if they were pregnant or had children 16 years of age or younger. SMI was defined by using a cut-off of five or more on the Threshold Assessment Grid (TAG) (Slade et al., 2000), a well-tested approach to identifying people with severe mental health problems. The TAG consists of seven domains covering intentional self harm, unintentional self harm, risk from others, risk to others, survival (basic amenities, resources or living skills), psychological problems and social problems which are graded according to severity. Women were excluded from this study if they were deemed too ill by their consultant (i.e. they did not have the capacity to agree to this research project or were too acutely disturbed to engage in an interview) or if they had learning disabilities (IQ less than 70). Thirteen service users and 19 staff members were interviewed in individual semi-structured interviews, and as a result, three new domains of need were identified (pregnancy care, sleep, violence and abuse) and three domains of need from the original CAN were amended (safety to child/children and others, practical demands of childcare and emotional demands of childcare).

The first draft of the CAN-M was then sent to the project steering group and an advisory group to examine the new domains. These groups comprised experts from a diverse range of professional backgrounds, including a perinatal psychiatrist, a child psychiatrist, two general adult psychiatrists, two psychologists, an occupational

therapist, a senior nurse, a senior social worker, and a service user. Their comments resulted in minor changes to the wording of the domains and the creation of a new coversheet which highlights child protection issues. Validity and reliability were investigated using the CAN-M-R (research version) which is a longer version than the CAN-M-S (short version for research and clinical use). This paper reports on the validity and reliability of section one, which is common to all three instruments, and assesses the presence of a need and whether it is met or unmet.

Reliability studies
Following the development of the instrument described earlier, participant pairs consisting of a service user and a staff member were enrolled in a reliability study. Interviews were conducted in person by a lead rater and in the presence of a silent second rater (time 1, T1). Permission to videotape interviews was sought from the service-users and members of staff when a second rater was unable to attend. All tapes were destroyed following the completion of the evaluation. A total of six raters took part in the reliability study, each with varying professional skills and personal experience in the areas of research, service user experience, nursing, psychology and occupational therapy. No formal training was given to the raters, but they received a brief explanation of the CAN-M coding algorithm. All raters rotated in their role as lead rater and silent rater, and each rater completed at least two interviews as the lead rater and five as the silent rater. The level of agreement between the lead and silent rater (average over the six raters) provided an estimate of inter-rater reliability. All interviews performed at T1 were timed.

Test–retest reliability was also investigated to give a measure of the instrument's stability over time. The rater who performed the interview at T1 re-interviewed the same respondents at the second point in time (T2) without the presence of a second rater. We aimed to re-interview patients 1–2 weeks later to exclude memory effects but not so long that external change occurred (Streiner and Norman, 2003); where major clinical changes did occur analyses were repeated excluding these patients.

Validity studies

Content and consensual validity
A national survey was carried out of service users and professional experts who rated each of the proposed need domains on a five-point Likert scale of importance (ranging from 'Not at All' to 'Essential'). The service users were recruited from a range of inpatient and outpatient sites across south London, and the names and contact details of professional experts working with mothers and pregnant women with SMI were provided by the members of the steering group committee and advisory board.

Concurrent validity
Concurrent validity was assessed to determine the accuracy of the new CAN-M instrument. No widely accepted 'gold standard' instrument exists currently for the assessment of needs of pregnant women and mothers with severe mental health problems. Thus, in order to establish the concurrent validity of the CAN-M, the new instrument was compared with the two subscales of the Global Assessment of Functioning (GAF) (Endicott et al., 1976), which measures the severity of symptomatology due to psychiatric symptoms (GAF-S), and the severity of disability (GAF-D). It was anticipated that the scores on the GAF-S and GAF-D would reflect an inverse relationship with the level of needs identified by the CAN-M. Service users from inpatient and outpatient sites and healthcare professionals identified by the service users as staff who knew the patient best, were recruited for the concurrent validity and reliability studies.

The concurrent validity was calculated by firstly comparing the CAN-M summary scores (total number of needs) rated by staff with the GAF scores, and secondly, by comparing individually selected items from the CAN-M with the GAF instruments, as identified by a recent study which examined factor loadings of CAN needs (Korkeila et al., 2005). In this study, the five domains of psychological distress, psychotic symptoms, safety to self, company, and general physical health loaded on the symptomatology factor, and the eight domains of daytime activities, information, intimate relationships, sexual expression, education, telephone use, budgeting, and benefits loaded on the 'impairment' factor.

Statistical analysis
STATA version 9.0 was used for the analysis including a downloaded command 'concord' (Steichen and Cox, 2002). A significance level of 5% was used. Nonparametric correlations (Spearman's r) were used for testing the concurrent validity; and their interpretation

was based on Cohen's rule (Cohen, 1988), i.e. a correlation of less than 3 is considered low, 0.3 to 0.6 moderate and more than 0.6 high. Concordance correlation coefficients were used for the inter-rater reliability and test–retest reliability analyses (Kuei-Lin, 1989, Steichen and Cox, 2002) to measure absolute agreement. Absolute agreement across raters and time is assessed, since this is generally the quantity of interest (typically mean levels of need would be compared between individuals and groups). As different raters may endorse different individual needs we also examined inter-rater reliability and test–retest for unmet needs (which is of most clinical relevance) by individual domains of the CAN-M. Concordance correlations normally lie between 0 and 1, with values over 0.7 being generally regarded as acceptable and values over 0.9 as representing very good agreement. Paired t tests were used to compare mean numbers of needs between users and staff, and between T1 and T2 values for the same user Kappa coefficients were calculated for individual needs domains. In a few cases these could not be calculated because the responses were all at the ceiling or floor value. In addition regression analyses were performed to investigate variation among individual raters (using the xtreg command in Stata including patients as random effects and raters as fixed effects). The fixed effects model for raters was used because we were interested in whether the specific raters might differ from one another.

Results

The first draft of the CAN-M had 25 domains which were increased to 26 after the national survey (see later). These domains are listed in Table 1.

Demographics and needs profile

Thirty-six service user–staff pairs were recruited for the reliability study. Four women could not be included as they did not have decision-making capacity due to their acute illness, and one woman was excluded because of learning disability.

Staff comprised 17 (50%) nursing staff, eight (24%) mental health/project/support worker, four (12%) health visitors, two (6%) social worker and three (9%) other professionals. The sociodemographic characteristics of the service users are shown in Table 2.

The mean total of needs (met and unmet) rated by the service users at T1 was 7.69 (standard deviation, SD = 4.31) as reported by the service users themselves, and

Table 1. The domains of need included in the Camberwell Assessment of Need for mothers (CAN-M)[1]

1. Accommodation	14. Substance misuse
2. Food	15. Company
3. Looking after the home	16. Intimate relationships
4. Self care	17. Sexual health
5. Daytime activities	18. *Violence and abuse*
6. General physical health	19. *Practical demands of childcare*
7. *Pregnancy care*	20. *Emotional demands of childcare*
8. *Sleep*	21. Basic education
9. Psychotic symptoms	22. Telephone
10. Psychological distress	23. Transport
11. Information	24. Budgeting
12. Safety to self	25. Benefits
13. *Safety to child and others*	26. *Language, culture and religion*

[1]New or modified domains have been italicized.

6.22 (SD = 3.16) when reported by staff. Overall, service users were found to report significantly more needs than the staff at T1 (t = 3.67, mean difference = 2.19, 95% confidence interval, CI = 0.97 to 3.42, p < 0.001)). The mean total of unmet needs per user at T1 was 5.51 (SD = 4.39) and 3.42 (SD = 3.01) as reported by the service user and staff, respectively (mean difference = 2.55, 95% CI = 1.29 to 3.81, p < 0.001). Highest numbers of unmet needs were rated in the domains of Psychological distress (51%), Sleeping problems and Budgeting (both 40%), Daytime activities (37%), and an absence of Information, feelings of Social isolation and personal difficulties relating to either past or current experiences of Violence and abuse (each 34%).

Young children were present at 13 (36%) T1 interviews. The mean duration of the interview at T1 for the users was 23.3 minutes (SD = 11.4 minutes) and the presence of children was not associated with the interview duration (p = 0.54). The mean total number of needs reported by the users did not differ depending on the presence or absence of young children in the interview room (p = 0.86). The mean duration for the T1 interview with staff was 18.29 minutes (SD = 4.40 minutes).

Reliability

Concordance correlation coefficients between the total CAN-M summary scores of the lead and silent raters

Table 2. Characteristics of service users participating in the evaluation of the CAN-M version

Characteristics		
Age	Mean 34.44	Standard deviation (SD) 6.87
Marital status	17 (47%) Single 14 (39%) Cohabit/married	4 (11%) Separated/divorced 1 (3%) Widowed
Ethnicity	16 (44%) White 13 (36%) Black	2 (6%) Asian 5 (14%) Other
Age at leaving full-time education[1]	1 (3%) 11 years old 10 (28%) 14–15 years	11 (31%) 16–18 years 8 (25%) 19 and above
Employment status[1]	15 (42%) Medically retired 8 (22%) Employed 11 (31%) Unemployed	1 (3%) Student 1 (3%) Other
Number of children aged 16 or younger	2 (6%) Pregnant with no children 21 (58%) 1 child	9 (25%) 2 children 4 (11%) 3+ children
Custody of youngest child	23 (68%) Mother 3 (9%) Father (if separated)	5 (15%) Relatives 3 (9%) Adopted
Living with child	25 (74%) Yes	9 (26%) No
Living with other adults	9 (25%) No 12 (33%) Spouse/partner 6 (17%) Parents	5 (14%) Unrelated others 3 (8%) Child 16+ years old 1 (3%) Other relatives
Recruitment site	12 (33%) Mother and baby unit 10 (28%) Community mental health team/day centres 9 (25%) Perinatal outpatient clinic 5 (14%) Acute inpatient ward	
Primary clinical diagnosis	11 (31%) Schizophrenia or other psychotic disorder 11 (31%) Depressive disorder 8 (22%) Bipolar affective disorder 3 (8%) Anxiety disorder 1 (3%) Personality disorder 2 (6%) Not known	
Service contact	6 (17%) 0–6 months 4 (11%) 6–12 months	9 (25%) 2–5 years 17 (47%) > 5 years
Number of lifetime psychiatric admissions[1]	8 (23%) No hospital admission 8 (23%) 1 admission	13 (37%) 2–4 admissions 6 (17%) 5 or more
Duration of user–staff relationship	Mean 16.76 months Minimum 2 weeks	SD 25.34 months Maximum 10 years
TAG[2]	Mean 8.7	SD 3.1
GAF-S[3]	Mean 60.75	SD 13.46
GAF-D[4]	Mean 59.84	SD 15.02

[1] Missing data.
[2] TAG, Threshold Assessment Grid ratings.
[3] GAF-S, Global Assessment of Functioning – symptoms.
[4] GAF-D, Global Assessment of Functioning – disability scale.

for total number of needs (inter-rater reliability) and at the two time points of T1 and T2 (test–retest reliability) were calculated. The time interval between T1 and T2 averaged 13 days (SD = 6.73), and 87% of the participants interviewed at T1 were re-interviewed at T2. The concordance coefficients for the inter-rater analysis were 0.99 (95% CI = 0.98 to 0.99) for the service users and 0.95 (95% CI = 0.91 to 0.98) for the staff ratings. For the test–retest reliability, the coefficients were 0.92 (95% CI = 0.87 to 0.98) and 0.79 (95% CI = 0.63 to 0.94) for the service users and staff, respectively. These calculations were repeated excluding the seven patients whose clinical condition had changed between T1 and T2 (e.g. admitted or discharged between the two time points); test–retest reliability coefficients were little changed. A paired t-test showed that the total number of needs (met and unmet) across the two time points did not differ significantly for either the service users (mean difference = 0.47, 95% CI = −0.12 to 1.06, $p = 0.12$) or staff ratings (mean difference = 0.44, 95% CI = −0.54 to 1.42, $p = 0.36$), nor did the time between T1 and T2 differ significantly between the service users and staff (mean difference = −0.96, 95% CI = −2.26 to 0.35, $p = 0.14$).

Given the clinical importance of being able to identify a serious area of unmet need in the study sample, results were also calculated using the total number of unmet needs as reported by the two raters. The results of the inter-rater analysis were 0.93 (95% CI = 0.89–0.98) for the service users and 0.83 (95% CI = 0.73–0.94) for the staff. The test–retest reliability coefficients were 0.91 (95% CI = 0.86–0.97) and 0.85 (95% CI = 0.73–0.96) for the service users and staff, respectively. These calculations were repeated excluding the seven patients whose clinical condition had changed between T1 and T2 (e.g. admitted or discharged between the two time points); test–retest reliability coefficients were little changed. Table 3 gives inter-rater reliability and test–retest reliability coefficients (κ values) for unmet needs by individual domains of the CAN-M.

No systematic differences in rating styles were identified between the lead rater and silent raters in identifying needs for mothers and pregnant women with SMI (mean difference = −0.03, 95% CI = −1.33 to 1.27 for users; mean difference = −0.38, 95% CI = −2.29 to 1.54 for staff). There was no evidence for significant variation among raters in the regression when numerically coding the staff responses ($\chi_2 = 5.65$, $p = 0.34$). However there was some weak evidence to suggest that there were differences between the rater with the most experience and one of the other raters by an average of one need ($p = 0.05$).

Validity

Content and consensual validity
Sixty-three (74% response rate) service users participated in the survey. The representativeness of the need domains for the draft CAN-M was calculated by estimating the average ratings made. Twenty-four out of the 25 domains were found to have a mean score of three and above, i.e. at least 'Moderate importance'. Four of the five new domains received a score of four and above, indicating that these needs were viewed as 'Very important' or 'Essential', with the Sleep domain falling slightly below at 3.97. The highest scoring items were the Practical demands of childcare and Safety to self domains, while the lowest scoring domains were Sexual health and Intimate relationships. In the staff survey the 50 (68% response rate) professional experts rated all 25 domains an average score of three or above, indicating that the experts viewed all listed domains as being at least 'Moderately important'. The expert group also rated the five new CAN-M domains a score of four or above. The highest scoring items were the Safety to child and others and Safety to self domains, while the lowest scoring items were, again, the Sexual health and Intimate relationships domains. Participants were also invited to make suggestions for any other topics which they believed to be overlooked in the first draft. Participants indicated the need for an extra domain of language, culture and religious needs. The inclusion of this domain took the total number of needs in the CAN-M to 26.

Concurrent validity
The total summary scores for needs as rated by the staff were compared with the GAF-S and GAF-D. The Spearman's r correlation coefficients were moderate with the GAF-S = −0.36 (95% CI = −0.62 to −0.04), $p = 0.05$ and GAF-D = −0.52 (95% CI = −0.73 to −0.23), $p < 0.01$. Comparisons between the individually selected domains and the GAF-S produced a stronger correlation (−0.44, $p = 0.02$). This relationship was found to strengthen with the removal of the Physical health domain (as GAF-S assesses psychiatric symptomology only) and the inclusion of CAN-M specific domains of

Table 3. Inter-rater reliability and test–retest reliability for individual domains of the CAN-M (unmet needs)

Domains of needs	Staff				Service user			
	Inter-rater		Test–retest		Inter-rater		Test–retest	
	Percentage agreement	Kappa	Percentage agreement	Kappa	Percentage agreement	Kappa	Percentage agreement	Kappa
1. Accommodation[1]	97	0.87	100	1.0	95	0.85	88	0.66
2. Food[1]	97	0.65	96	0.65	95	0.64	96	0.78
3. Looking after home[1]	94	0.72	96	0.78	94	0.80	84	0.41
4. Self care[1]	97	0.65	100	1.0	97	0.84	100	1.0
5. Daytime activities[1]	88	0.69	92	0.78	94	0.88	92	0.78
6. General physical health	88	0.64	80	0.32	94	0.84	80	0.59
7. Pregnancy care	100	1.0	—²	—²	100	1.0	92	-0.04
8. Sleep	91	0.80	84	0.61	94	0.88	76	0.51
9. Psychotic symptoms[1]	97	—³	92	—³	97	0.79	76	0.48
10. Psychological distress[1]	84	0.69	80	0.59	94	0.88	80	0.52
11. Information[1]	97	0.65	96	0.65	94	0.88	84	0.51
12. Safety to self	97	0.78	96	0.65	97	0.84	88	0.50
13. Safety to child	100	1.0	88	-0.06	97	—³	92	0.71
14. Substance misuse[1]	100	1.0	100	1.0	100	1.0	100	1.0
15. Company[1]	91	0.79	88	0.75	94	0.87	76	0.52
16. Intimate relationships[1]	97	0.92	84	0.60	97	0.94	84	0.63
17. Sexual health[1]	97	0.89	96	0.83	97	0.91	92	0.70
18. Violence and abuse	90	0.77	84	0.64	97	0.94	84	0.68
19. Practical demands of childcare	87	0.43	96	0.78	94	0.80	84	0.57
20. Emotional demands of childcare	87	0.43	80	0.32	97	0.92	84	0.51
21. Basic education[1]	100	1.0	92	-0.04	—²	—²	88	-0.05
22. Telephone[1]	—²	—²	—²	—²	100	1.0	—²	—²
23. Transport[1]	94	0.47	96	0.65	91	0.74	92	0.47
24. Budgeting[1]	97	—³	96	—³	91	0.77	100	1.0
25. Benefits[1]	94	0.63	92	0.62	89	0.76	88	0.50
26. Language, culture and religion	97	0.65	96	0.65	100	1.0	88	0.52

[1] Domain validated in previous CAN studies (Phelan et al., 1995).
[2] Kappa coefficient could not be calculated due to small number of ratings.
[3] Kappa coefficient could not be calculated due to extreme marginal totals.

Safety to child/children and others and Sleep (−0.62, $p < 0.001$). Domains associated with impairment (including the two new childcare domains, domains assessing abilities, such as buying and preparing meals (Food), keeping the house clean and tidy (Looking after the home), and using public transport (Transport)) were significantly associated with the GAF-D (−0.44, $p = 0.01$).

Discussion

Main findings

The CAN-M assesses needs in domains of particular relevance to mothers and pregnant women with severe mental illness. The inter-rater reliability and test–re-test reliability are good and minimal differences in rating styles were found. This is evidence that this instrument can be used by professionals from different backgrounds. The CAN-M has been developed for use by incorporating the views of service users and staff, the guiding principles adopted in previous CAN versions, as well as the key care components outlined by the Department of Health (2002, 2003). The CAN-M can however only identify problems in domains of need, and a more thorough assessment by a specialized professional may be required at a later date.

The CAN-M has been validated with women in the antenatal or postpartum period, mothers of young children or adolescents, and mothers who have lost custody of their children. The decision to include this latter criterion was supported by the finding that motherhood remains an integral part of these users' identities, even in the cases of child removal or adoption (Stanley et al., 2003). Moderate correlations were identified with the GAF scales, consistent with the evaluation of other amended CAN versions. Inter-rater reliability and test–retest reliability were established using the total needs (met plus unmet) and unmet needs data.

Limitations

The identification of needs domains was carried out on only a small sample of women in contact with services and may not represent the views of other mothers with SMI. In addition, the reliability and validity studies using the service user–staff pairs included only two pregnant women. Further reliability and validity studies are needed with a larger representative population of pregnant women and mothers with SMI, involving a greater number of raters. However, the survey of professional experts and service users indicated a consensus that the needs domains included in the instrument were relevant to this population, and only one other domain was identified by this group for inclusion in the CAN-M (the language, culture and religion domain) which was therefore added at the draft stage. Concurrent validity was measured using the subscales of the GAF; but the GAF could only provide an indirect measure of need for comparison with the CAN-M and not all the impairment domains identified by Korkeila et al. (2005) appeared relevant to our population. Multiple methods would lead to greater validity and further validation using measures such as the General Health Questionnaire (Goldberg and Blackwell, 1970), and measurement of domestic violence would be useful. Use of the silent rater also has implications for the interpretation of inter-rater reliability as that rater would have been dependent on the questions asked by the lead rater. Thus, strictly speaking, the reliability underestimates the agreement between pairs of completely independent raters. However it is very difficult to envisage how this could be measured given the method of administration of the CAN-M.

Implications for mothers in contact with mental health services

Over 60% of women with SMI are mothers (Howard et al., 2001; McGrath et al., 1999) and therefore an instrument that can assess their needs could be widely used. The CAN-M will provide an accurate assessment of mother's individual needs in routine clinical assessment, care plans and for research purposes. For example, identification of an unmet need in the Emotional demands of childcare domain may prompt referral to a developmental psychologist. The instrument may also aid the early identification of problems in the areas of childcare, risk assessment, and the impact of domestic violence on a child, thus encouraging professionals to intervene at a much earlier stage. Pregnancy can be a trigger for domestic violence to begin or intensify (Department of Health, 2000); the CAN-M could therefore help professionals identify domestic violence antenatally in women with SMI. The CAN-M is the first CAN measure which has been tested across professional groups and demonstrated to be reliable and, as with other versions of the CAN, the CAN-M provides service user ratings of needs which are known to be more reliable than those of staff (Slade et al., 1999). The CAN-M (research and shortened versions), and

further information on its development and training issues, will be available (Howard et al., 2008). It is hoped that the CAN-M will enable widespread national and international systematic assessment of the health and social care needs of this important client group.

References

Cohen J. Statistical Power Analysis for the Behavioural Sciences. Hillsdale, NJ: Lawrence Erlbaum Associates, 1988.

Department of Health. Domestic Violence: A Resource Manual for Health Care Professionals. London: Department of Health, 2000.

Department of Health. Women's Mental Health: Into the Mainstream: Strategic Development of Mental Health Care for Women. London: Department of Health, 2002.

Department of Health. Mainstreaming Gender and Women's Mental Health: Implementation Guidance. London: Department of Health, 2003.

Endicott J, Spitzer R, Fleiss J, Cohen J. The Global Assessment Scale. Arch Gen Psychiatry 1976; 33: 765–71.

Goldberg DP, Blackwell B. Psychiatric illness in general practice: A detailed study using a new method of case identification. Br Med J 1970; 2(5707): 439–43.

Howard LM, Kumar R, Thornicroft G. Psychosocial characteristics and needs of mothers with psychotic disorders. Br J Psychiatry 2001; 178: 427–32.

Howard LM, Hunt K, Slade M, O'Keane V, Seneviratne G, Thornicroft G, The CAN-M: Camberwell Assessment of Need – Mother's version. A Needs-based Assessment for Pregnant Women and Mothers with Severe Mental Illness. London: Royal College of Psychiatrist, 2008.

Joseph JG, Joshi SV, Lewin A, Abrams M. Characteristics and perceived needs of mothers with serious mental illness. Psychiatric Services 1999; 50: 1357–9.

Korkeila J, Heikkila J, Hansson L, Sorgaard KW, Vahlberg T, Karlsson H. Structure of needs among people with schizophrenia. Soc Psychiatry Psychiatric Epidemiol 2005; 44: 233–9.

Kuei-Lin L. A concordance correlation coefficient to evaluate reproducibility. Biometrics 1989; 45: 255–68.

McGrath JJ, Hearle J, Jenner L, Plant K, Drummond A, Barkla JM. The fertility and fecundity of patients with psychoses. Acta Psychiatr Scand 1999; 99: 441–6.

Miller LJ, Finnerty M. Sexuality, pregnancy, and childrearing among women with schizophrenia – spectrum disorders. Psychiatric Services 1996; 47: 502–6.

Orrell M, Hancock G. CANE: Camberwell Assessment of Need for the Elderly. London: Gaskell, 2004.

Phelan M, Slade M, Thornicroft G, Dunn G, Holloway F, Wykes T, Strathdee G, Loftus L, McCrone P, Hayward P. The Camberwell Assessment of Need: the validity and reliability of an instrument to assess the needs of people with severe mental illness. Br J Psychiatry 1995; 167: 589–95.

Slade M, Leese M, Taylor R, Thornicroft G. The association between needs and quality of life in an epidemiologically representative sample of people with psychosis. Acta Psychiatr Scand 1999; 100: 149–57.

Slade M, Powell, R, Rosen A, Strathdee G. Threshold Assessment Grid (TAG): the development of a valid and brief scale to assess the severity of mental illness. Soc Psychiatry Psychiatric Epidemiol 2000; 35: 78–85.

Stanley N, Penhale B, Riordan D, Barbour RS, Holden S. Working on the interface: identifying professional responses to families with mental health and child-care need. Health and Social Care Community 2003; 11(3): 208–18.

Steichen T, Cox NJ. A note on the concordance correlation coefficient. Stata J Stata Corp LP 2002; 2(2): 183–9.

Streiner DL, Norman GR. Health Measurement Scales. Oxford: Oxford University Press, 2003.

Thomas S, Harty MA, Parrott J, McCrone P, Slade M, Thornicroft G. CANFOR: Camberwell Assessment of Need-Forensic Version. London: Gaskell, 2003.

Xenitidis K, Slade M, Thornicroft G, Bouras N. CANDID: Camberwell Assessment of Need for Adults with Developmental and Intellectual Disabilities. London: Gaskell, 2003.

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