Supplementary file 1

METHOD

Phase 1

Study design: Qualitative methods were used to elicit public and professional ideas about important features of community based CAMHS; these data were used to inform the development of the Delphi questionnaire for use in phase two of the study. [1] Interviews and focus groups were undertaken with children and young people and parents. Topic guides were used with questioning focussed on factors perceived to be important for promoting emotional wellbeing and preventing mental health difficulties, strategies (actual or anticipated) for seeking help in the event of concerns about mental health, perceived and/or experienced barriers and facilitators to accessing advice and support, and experience of service use. Appreciative inquiry techniques [2] were used to encourage participants to focus on moments where informal or formal supports had worked to preserve emotional health or to enable access to helpful support. Interviews were audio recorded and transcribed verbatim.

Professional opinions were gathered using questionnaires comprised of open ended questions. Questions sought to elicit views on the target recipients of services, processes that are or should be in place to identify children and young people and to access services, types of services and intervention that should be offered under the umbrella of CAMHS, outcomes that should be measured, and methods for enhancing the co-ordination of services

Patient and public involvement: Prior to submission for ethical approval, all study materials were reviewed by three young people and one parent with experience of CYP MH service use. Amendments were made to patient information sheets and invite letters in line with feedback.

Participants: Two groups of participants were recruited. Members of the public (including MH and social service users) were contacted in February 2015 via gatekeeper agencies (e.g. parent advocacy group; forum for adoptive parents, young carers network, schools) or key professionals in the researchers' networks. Efforts were made to approach community based agencies (e.g schools) so as to ensure recruitment of parents and children without experience of MH or other statutory service use.

Participants were purposively sampled to reflect service use (vs no service use), age of child, ethnicity and experience of known risk factors for poor mental health outcomes such as parental mental health difficulties, out of home care placement and neurodevelopmental disorder. Twelve

parents and six CYP took part in individual interviews and 35 individuals took part in four focus groups -12 adults and 23 CYP (see Table 1).

Purposive and snowball sampling were used to identify a large and diverse group of professionals from the child and adolescent workforce in the East of England. An initial seed list of prospective participants representing a range of sectors (e.g. Health, Education, Social Care, Local government, criminal justice and community and voluntary sector) was generated by approaching local and regional strategic networks or individuals, review of service directories and contacts, and from the professional networks of members of the research team. An invitation was made to nearly 400 professionals from different sectors and counties; recipients were encouraged to cascade the invite email through their networks. Ninety-five professionals completed the round one questionnaire (see Table 1). Due to the nature of the sampling strategy it was not possible to calculate the number of respondents as a proportion of those initially contacted.

Procedure: The study received ethical approval from the Health Research Authority in December 2014, and commenced in February 2015 (14/SC/1371). Members of the public interested in taking part in the study were asked by the gatekeeper agency to complete and sign a form providing basic demographic details and giving consent for their contact details to be shared with the research team. A member of the research team contacted the individual (if aged >16 years) or the individual's caregiver to arrange a research meeting, during which information would be given and consent sought. Parental consent and child assent was sought for children aged <16 years. Young people aged >16 years provided their own consent for participation.

Interviews and focus groups with CYP lasted between 20-40 minutes; those with parents between 40 and 80 minutes. Each participant received a £20 shopping token at the end of the study, irrespective of whether they complete both phases of the study.

Members of the children's workforce were recruited by generating an initial contact list through approach to local and regional strategic networks or individuals, review of service directories and contacts, and from the professional networks of the research team. An initial invite email was sent offering information about the study and containing a link to an online questionnaire (the option was also given to request a paper copy of the questionnaire). A request was made to the target individual to distribute the questionnaire to other relevant colleagues.

Recipients were asked to consent to participate in the study, only if they could in principle commit to participation in both phases of the study. Information about the purpose of the study was presented separately to the questionnaire and participants were required to indicate they had read this information and consent to participate, before being able to access the survey. Those individuals

who consented to participate were asked to generate a unique six character identifier using the first two letters of their town of birth, along with their day and month of birth (e.g. YE1511) to enable linking of responses across and within study phases. Two reminder emails were sent to non-responders in the initial seed sample one week and two weeks after distribution of the initial questionnaire.

Qualitative data collected in phase one were analysed thematically to identify service features and principles identified by participants. These ideas were then converted into items to be included in the Delphi questionnaire used in phase two of the study.

Analysis: The coding strategy drew on both inductive and deductive approaches. A subset of transcripts was read by two researchers to identify initial codes which were then discussed within the team and disagreements were resolved. Codes were then used deductively, with data coded directly to them by a single coder. A proportion of transcripts were independently coded by two researchers to assess agreement between coders. Disagreements were discussed and resolved and where appropriate, transcripts were re-coded. To be thorough, the deductive process was combined with inductive open coding [3], meaning any data that did not fit our deductive code list were placed into new codes.

This process was repeated for the coding of questionnaires completed by professionals, with the framework derived from analysis of interviews with the public serving as the starting point. New codes were identified, discussed and added to ensure the breadth of professional views were adequately captured.

Codes were aggregated into eight overarching themes which were subsequently reduced to four: Promoting emotional health and wellbeing, preventing problems; getting help; measuring success; transforming services. Codes encompassed by these themes were used to create individual questionnaire items for use in phase two. Data were supplemented by content analysis of several key local and national stakeholder consultations and service reviews in an attempt to identify aspects of service delivery that may not have been mentioned by participants, but nevertheless are deemed important features of CAMHS. [4–9].

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