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Systematic Review

Qualitative diary methods in mental health research

A scoping review and recommendations for research and reporting

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Abstract:

Qualitative diary methods have great potential for mental health research, as they provide rich data about experiences and phenomenon as and when they happen, from the perspectives of participants themselves. They provide unique insight into behaviour, cognitions, and change over time in greater depth and detail than other quantitative or qualitative methods might offer. This paper presents the results of a scoping review of qualitative diary methods in mental health research, aimed at clarifying how diary methods are used in mental health research, and outlining key decisions and considerations in planning and conducting a qualitative diary study. Forty-eight papers were reviewed, and the findings highlight different elements of qualitative diary methods. Research aims, suitability for participants, and ethical issues are first discussed, followed by elements of diary study design including diary format, administration, intervals, timeline, sample size, diary structure and guidance, and additional data collection methods. Finally, analysis approaches and the strengths and

challenges of qualitative diary methods are reviewed. Discussion around the future of QDMs follows, including a checklist for conducting and reporting a qualitative diary study.

Keywords: diaries; qualitative; experience sampling; longitudinal; mental health

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Conflict of Interest

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Abstract

Qualitative diary methods have great potential for mental health research, as they provide rich data about experiences and phenomenon as and when they happen, from the perspectives of participants themselves. They provide unique insight into behaviour, cognitions, and change over time in greater depth and detail than other quantitative or qualitative methods might offer. This paper presents the results of a scoping review of qualitative diary methods in mental health research, aimed at clarifying how diary methods are used in mental health research, and outlining key decisions and considerations in planning and conducting a qualitative diary study. Forty-eight papers were reviewed, and the findings highlight different elements of qualitative diary methods. Research aims, suitability for participants, and ethical issues are first discussed, followed by elements of diary study design including diary format, administration, intervals, timeline, sample size, diary structure and guidance, and additional data collection methods. Finally, analysis approaches and the strengths and challenges of qualitative diary methods are reviewed. Discussion around the future of QDMs follows, including a checklist for conducting and reporting a qualitative diary study.

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Introduction

Qualitative diaries provide rich data about events and experiences as and when they happen and across time, giving unique insight into events, experiences, and perceptions of the participants keeping the diaries. Qualitative diary methods (QDMs) can garner novel insights into mental health, but to date QDM research in this area is limited. Qualitative diaries are defined here as any diary kept by participants detailing their experiences, thoughts, or feelings, beyond completing surveys with short-form answers or questionnaire scales. This paper provides a scoping review of how QDMs are used in mental health research, consolidated into a list of recommendations for QDM research and reporting to support the rigorous use of this method.

Alaszewski (2006) highlights the potential of narratives produced through diaries to help us understand how experiences are constructed and communicated. A free-text diary kept over time has the potential to capture details of experience that are missing from retrospective recall (as in interviews), and to shed light on patterns and/or changes over time (Bolger et al., 2003; Monk et al., 2015). Interviews can be influenced by difficulties with recall, with retrospective thinking applying motive and meaning to actions, thoughts or feelings that may not be present at the time, and thus distorting understanding of processes as they happen (Bartlett & Milligan, 2015). Research involving direct and predefined questioning, such as questionnaires and even semi-structured interviews, may restrict understanding and obscure problems (Pettersen & Rosenvinge, 2002). Crucially, reliance on outcome measures and interviews means that the context and complexities of day-to-day life with mental illness may not be captured. Capturing

these through qualitative diaries can provide a wealth of information to improve understanding of the experiences and needs of people with mental health difficulties and inform intervention development.

Alongside the value of data collected using QDMs, this method may improve accessibility of research participation and benefit participants. For some, it may be easier to write about certain things than to discuss them in an interview (Woll, 2013), particularly when relating stigmatised experiences, as the private nature of diaries means there are reduced social barriers to communicating personal thoughts and feelings (Hoffmann et al., 2010). QDMs can be inherently participatory, enabling participants to take part in their own time and way, with greater control over what information to contribute and how, in contrast to the restrictive settings of interviews, focus groups, or questionnaires (Bijoux & Myers, 2006). Researcher influence over participants' responses is reduced if the researcher is not present for data collection, meaning that power differentials are less salient than in other data collection methods (Monrouxe, 2009). This may be particularly helpful when investigating mental health conditions or other difficult experiences (Jordan et al., 2020; Lev-Wiesel, 2006). Keeping a research diary may be helpful for participants' own lives, offering an opportunity for reflection and to focus on particular issues, which can then be a coping mechanism and provide health benefits in and of itself (Matthews & Williamson, 2016; Pennebaker & Seagal, 1999). Finally, keeping a written diary can help the diarist to make sense of experiences of vulnerability and support understanding of ongoing experiences and self-development (Bernal Marcos et al., 2023).

Technology is now available to support digital data collection that promises to make QDMs significantly easier in terms of costs, time, and convenience for both researchers and participants; various smartphone applications and websites offer systems for recruitment, data collection, and participant reminders. This has proven fruitful for Ecological Momentary Assessment (EMA; Shiffman et al., 2008) and Experience Sampling Methods (ESM; Myin-Germeys et al., 2009) studies, which have been able to utilise larger sample sizes and longer data collection periods (de Vries et al., 2020). EMA and ESM studies involve repeatedly sampling behaviours and experiences in real time using short scales and questionnaires, but do not typically involve qualitative elements as the focus is typically on statistical analysis.

Theoretical understandings derived from qualitative diary research may be more transferable, or have wider applicability in terms of generating theory, if based on a range and depth of information and understanding (Kuper, 2008), and may further support the integration of qualitative and quantitative data in randomised controlled trials (Richards et al., 2019). Alongside this, the rise in natural language processing approaches means there is increasing demand for participant-produced text for health research (Askland et al., 2015), and QDMs offer a route to rich data, putting participant words at the heart of research.

There is therefore considerable value in using qualitative diary methods in mental health research, both for researchers and participants. However, the relative novelty of

this method in mental health research means that QDMs are being used variably, and there is little guidance around how to do this type of research well. Additionally, there are several potential challenges and ethical considerations specific to this method, such as possible impacts of diary keeping on participants, and issues around burden of research, participant engagement, and dropout, which need to be explored and understood.

This paper presents a scoping review of mental health research using qualitative diary methods. The aim of this review was to find out how qualitative diary methods are used in mental health research, the key benefits and challenges, and to provide an overview of decisions involved in planning and conducting a qualitative diary study in mental health research.

Methods

A scoping review was chosen as the aim is to examine the range and nature of qualitative diary studies in mental health, and how these were conducted, rather than an exhaustive summary of each QDM research study (Munn et al., 2018). The review was conducted by researchers who all have experience of designing and using QDM research in the mental health field. Searches were conducted, with the date set as from the beginning of the databases to May 2022, on Ovid Medline(R), Embase, PsycINFO, and CINAHL, with combinations of the search terms (and variations of) diary, qualitative, mental health, and psychology. The full search strategy and examples can be found in the supplementary material. The findings of this scoping review are reported in line with PRISMA guidelines for scoping reviews (Tricco et al., 2018).

Included papers had to contain a qualitative diary as a primary data collection method, and present qualitative analysis of the diaries. The objective of keeping the diary had to be to report on the experience of any mental health or mental ill-health symptoms, or experience of mental health treatment or intervention. Papers needed to contain empirical data and be published in English in a peer-reviewed journal.

Papers were excluded if the diary was not qualitative or if no qualitative analysis was presented, if the diary was used as part of an intervention rather than as a research element, or if the only qualitative element was a list of items to be rated numerically. Additionally, sleep, food, and activity diaries were excluded as these are common research elements that primarily contain categorical or numeric data.

A total of 3860 papers were identified through searches. A PRISMA chart (Page et al., 2021) reporting the numbers of included and excluded papers is presented in Figure 1. Title and abstract screening was conducted by one researcher, with 10% also screened by a second screener to ensure reliability and validity of paper selection. If a paper was on the borderline between inclusion and exclusion, it was discussed with two researchers and a joint decision made. Following recommendations by Siddaway et al. (2019), we took a cautious approach to exclusion to avoid dismissing any potentially useful texts, so a larger number of papers went to the full-text screening stage. Full-text screening of 167 records was carried out by one researcher, with discussions with two other researchers in all cases where it was not clear if the paper should be included. Forty-eight papers, totalling 44 studies, met the criteria for inclusion in the review.

The following details were extracted from each paper: citation; aims; study population; condition or experience being investigated; justification given for using diary methods; method of diary collection (paper, app, email); mode of diary (video, audio, text, photo); number of diary entries solicited per participant; timespan of diary completion; format of diary (prompted, unprompted); nature of prompts (if used - e.g. "Time to fill out your diary" or specific questions); number of participants (including age and ethnicity where reported); other data collection methods used; analysis methods; epistemological position; summary of findings; where relevant, statement of what findings resulted from the diaries compared to other data collection methods in the study; methodological challenges of using diary methods; and any ethical issues associated with the use of diary methods in the study. A summary of all included papers is provided in Electronic Supplementary Material – Table 1.

Analysis of the included papers followed a constant comparative method described by Gentles et al. (2016). Firstly, data were extracted from each paper using the categories outlined above. Following this, matrices were made of each category to allow for easier comparison between each study's approach to each section. Narrative summaries were then produced for each question, including comments on what was unclear or missing from the research report. The final analysis involved organising the summaries into categories that flow logically in the decision making process of planning and conducting a qualitative diary study in mental health research.

Findings

The included studies were published between 1996 and 2021, across 13 countries, primarily the UK, United States of America, Australia, and Nordic countries. Participants varied widely in age, gender, Ethnicity, and mental health difficulties, and some studies also included participants who were clinicians or mental health therapists. Most papers were intervention evaluation studies, or research exploring experience of particular mental health difficulties. Full details of included studies can be found in Electronic Supplementary Material – Table 1.

We have divided the review findings into three sections for clarity, each containing sub-sections summarising the different aspects of planning and conducting a qualitative diary study. ‘Suitability of qualitative diary methods’ outlines factors involved in determining if diary methods are suitable for the proposed research. ‘Diary design’ encompasses the different factors involved in designing a qualitative diary study. Finally, ‘Analysis and evaluation’ covers approaches to analysing data, and evaluation of strengths and limitations of QDMs.

Suitability of qualitative diary methods

This section provides an overview of key considerations in determining whether qualitative diary methods are suitable for the proposed research. It covers the types of research aims for which QDMs are used, the suitability of QDMs for the participants, and ethical issues that might be specific to conducting a QDM study.

1. Research aims

The papers included in the review highlight that QDM designs exist on a wide continuum, from short-term recording of experiences to support an interview (Jordan et al., 2020) to long-term data collection that tracks in-depth experiences over time (Thupayagale-Tshweneagae, 2011). Included papers covered a range of research types, with three intervention development studies (where diary data supported the development of an intervention), 23 intervention evaluation studies (where diary data was used to evaluate participant experiences of interventions), and 18 studies investigating experiences of mental health.

Several key reasons were cited for using QDMs, including capturing immediate experiences and reducing recall problems, and gathering rich and in-depth data (such as in Lundgren et al., 2018). Matthews & Williamson (2016) reasoned that this data may provide insights on triggers, processes, and influencing factors. The value of diaries in putting participants' experiences at the centre of the research was also frequently cited. Upthegrove et al. (2016) stated that open-ended diaries could enable important topics to arise organically across time and participants, rather than being introduced by researchers, laying groundwork for further research and theory development. McDermott et al. (2019) chose diary methods in several formats to support inclusivity, agency, and the different ways of knowing of their participants (LGBTQ+ youth). Some studies used QDMs to support other data collection. Claydon et al. (2018) used diaries to triangulate interview data and strengthen findings. Others used diaries to create topic guides for subsequent interviews (Denno et al., 2021; Deslandes et al., 2015; Long et al., 2016).

In summary, reasons for choosing QDMs centred around richness and immediacy of data, and as a way to support participants as experts on their own experiences. However, several studies used qualitative diaries without explaining the decision making around this (such as Fenwick et al., 2018; Gill et al., 2016).

2. Suitability for participants

Several important points were raised by papers in considering whether diary methods were appropriate and feasible for their participants. Given the review inclusion criteria and aims, most participants in included papers were experiencing some form of mental health difficulty, and researchers were sensitive to the needs to each specific population and considered several advantages of diary methods for participants.

Sheridan et al. (2018) highlighted the possibility of mental or physical health conditions affecting participants' ability to regularly record detailed diary entries, due to general concentration and energy level challenges of living with health conditions, alongside potential challenges with motivation. Jordan et al. (2020) reflected on the impact of mental health difficulties on verbal expression, suggesting that diaries could help participants who are less comfortable expressing themselves verbally by giving them the chance to collect and articulate their thoughts. Additional benefits to participants were highlighted by Craig et al. (2017), such as allowing participants time to reflect on

their responses and encouraging openness, alongside practical advantages such as reduced cost and enabling participants from a wider area to take part in the research. The removal of the direct presence of a researcher may also support participants to provide more open and direct reflections on their experiences, apart from the power dynamics and constraining structure and topic guides of interviews (Upthegrove et al., 2016).

These benefits to participants are also benefits to the research, supporting participants to engage in studies and communicate their experiences in ways that may be more comfortable to them, and therefore providing richer, more meaningful data.

3. Ethical considerations

The personal, detailed, and in-the-moment nature of diary data means there are specific ethical issues that must be navigated in a QDM study. However, only seven studies in the review considered ethical aspects specific to the use of diaries, beyond token comments about gaining consent at the start of the study.

Some reflected on the potential difficulties for participants of keeping a research diary. Diaries were considered by some to offer a more private way of collecting sensitive data (McDermott et al., 2019), which can be helpful for participants, but may also lead to safeguarding disclosures that the researchers have responsibility to respond to. Metsäranta et al. (2019) reported that in their study of adolescents with depression they had research staff reading diary entries daily to identify any concerns around suicidal ideation or harm to self or others, which were then reported to participants' health care providers. Granheim and Åström (2016) reflected that talking about difficult experiences in diary entries could potentially lead to further distress, but stop short of discussing how this could be managed; they also acknowledge that narrating difficult experiences could provide relief. Pope et al. (2006) gifted participants notebooks at the end of the study, so that they could continue to keep a diary if they found the practice helpful.

Differences in literacy levels might make diary entries difficult for some, or even exclude them, as highlighted by Rappe et al. (2008) and Sheridan et al. (2018), who suggest offering different media as alternatives to written diaries. Halliday et al. (2022) and Lundgren et al. (2018) also reflected on the potential burden to participants of taking part, with the latter arguing that in their intervention study, keeping a diary was not an unreasonable request as journaling is often encouraged as a complementary practice to

mindfulness-based stress reduction. Lundren et al. (2018) did, however, instruct participants that short or no entries were fine if they sometimes did not feel up to writing detailed diary entries. Halliday et al. (2022) noted that participants overall found the study to be a positive experience.

Halliday et al. (2022) reported that some participants were anxious about confidentiality, and that this affected what they chose to disclose. The authors report that they managed this retrospectively by using caution around presentation of the study findings, including limiting use of detailed quotes.

Finally, Halliday et al. (2022) offer reflections on qualitative diary studies where the researchers also have lived experience of the study topic. In their diary study during the Covid-19 pandemic, they highlight that researchers were going through the same circumstances of isolation and stress as the participants. They highlight their focus on reflexivity throughout the study as a way of managing this, and provided researchers a training session with a counsellor before the study start – to provide advice on managing emotional health and on strategies for handling contacts with participants.

It is concerning that so few studies using QDMs appeared to consider ethical issues around the use of diaries – although reporting may have been circumscribed by restrictive publication word counts. Given the sensitivity of the topic of mental health research, and potential vulnerability of the participants, it is important to demonstrate, firstly, that the researchers are considering the impact of this method on the participants and, secondly, how QDMs can support people with mental health difficulties to take part in research in ways that are helpful for them.

Diary Design

This section outlines factors and considerations involved in each aspect of a qualitative diary study.

4. Diary format

Video, audio, written, or photo diaries are common diary formats, though some studies have used art journals (Gwinner et al., 2013) or incorporated drawing (Jordan et al., 2020). Of the included papers, 36 were written diaries, four were a combination of photos and written entries, two were drawing and writing, one was audio, and one was video and writing.

Most papers with written diaries did not provide a clear rationale why the specific diary format was chosen, beyond highlighting why diary methods in particular were used. Explanations included that written diaries can be effective in situations where participants may struggle with verbal communication (Jordan et al., 2020), and that they give participants a space to record reflections on events and experiences (Voriadaki et al., 2015). McDermott et al. (2019) argue that methods that privilege verbal articulation alone provide limited access to emotional dimensions, particularly in young people, so using a combination of written and visual diaries may provide access to different ways of knowing. Denno et al. (2021) and Wallis et al. (2020) used diaries and photo elicitation to allow participants to identify important topics and to guide the focus of subsequent interviews. Graham et al. (2021) used video and text diaries, but do not explain the choice of these formats.

Overall, there was a limited consideration of the different diary formats and how these could affect the experiences captured by participants. Where this was discussed, it appeared that the appropriate format depends on the specific research question, alongside participant preference, and ethical issues, as outlined above.

5. Diary Administration

Whatever the diary format, there are multiple ways participants can record and send their diary entries to the researchers. The majority of included studies used paper diaries (n=30), while one gave an option of paper or email diaries, two just used email, three used online survey software, one used mobile phones, and one used a custom made website. For six of the included papers it was not clear how participants completed diaries.

Paper diaries, in the form of booklets or notebooks given to participants, are an easy and familiar format for participants. However, Lundgren et al. (2018) identified several limitations to paper diaries in their study, stating that they can get lost, forgotten,

or be read by others, and have to be returned to the researcher. A website where participants can complete and submit their diary entries may solve some of these issues, as used by McDermot et al. (2019), as may email diary submission (Reed et al., 2014).

Graham et al. (2021) used an online and mobile platform for their diaries, arguing that digital diary methods participants to record their experiences as they occur during their day-to-day lives.

Overall, discussion around pros and cons of different diary formats, and justification for choice of format, was missing from included papers. These details would have been helpful in evaluating how the study was conducted, and that the potentially different needs of participants were considered in the study planning. It is also of note that no Patient and Public Involvement in Research (PPI) was reported for studies in terms of assessing what participants would prefer.

6. Diary Intervals

Diary intervals refer to how frequently participants complete diary entries. Seven papers used daily entries, six used weekly, one used twice weekly, and 23 used event-contingent entries, where participants recorded a diary entry whenever an event of interest occurred. For seven papers, it was unclear how often participants kept diary entries.

Where diaries were kept daily, this was usually for a short period of days or a week preceding an interview which would draw on the diary entries, as in Jordan et al. (Ref), McDermott et al. (2019), and Wallis et al. (2020). In Gill et al. (2016), participants kept daily entries for a month, with two interviews over this period providing an opportunity to expand on their diary entries if they wished. For Craig et al.'s (2017) study, participants sent entries once or twice a week, detailing work-related experiences of hearing auditory hallucinations, which allowed the researchers time between entries to read them and send follow-up or clarifying questions. Sabner and Arnold (2021) also asked participants to keep diaries twice weekly, in this case responding to two different diary prompts each week. Weekly diaries were typically used alongside intervention evaluations, to coincide with weekly intervention sessions and solicit participants reflections post-session (e.g. Friedrichsen et al., 2014; Kragh et al., 2017 and others). Halliday et al. (2022) used weekly diaries over eight weeks during covid-19 lockdown measures.

Event contingent diaries naturally had the widest range of diary intervals, and it was not reported how frequently participants kept diaries, only the events that were being solicited, and for how long the diary keeping period took place. Graneheim and Åström (2016) used event-contingent diaries to account for variations in mental health and ensure that relevant experiences were captured when they happened, in their study aimed at understanding experiences of living with someone with severe mental health difficulties. Thomas and Lovell (2015) asked their participants to record any vomiting events, and their thoughts and feelings around them, to get an understanding of the day-to-day managing of their bulimia symptoms.

In summary, the frequency and interval of diary entries depended on the phenomenon or experience that is being investigated, how much and how quickly it may change across time, and the detail of data needed.

7. Diary Time Period

There was a wide range in time periods that diaries were kept for, depending on the aims of the research and what experience or phenomenon was being investigated. Intervention evaluation studies tend to involve keeping diaries for the timespan of the intervention only, such as Rayner et al. (2022) in which participants were asked to record any self-harm during a 12-week intervention, and Kragh et al. (2017), where participants reported their experience of light therapy and depression during the nine week intervention. Studies using diaries to support interviews typically used a week long diary keeping period, e.g. Long et al. (2016).

Event-contingent diaries range in length according to what is being explored. Gill et al. (2016) wanted to fully capture the depth and range of experiences of atypical medication in those with Auditory Verbal Hallucinations, and asked participants to record their experiences daily for a month. In Sabner and Arnold (2021), participants kept diaries twice weekly for 15 weeks, the duration of the first semester of college, recording their mental health experiences and how these changed over the course of the semester. One paper reported that participants kept diaries for two years, reporting their experiences of everyday life close to a person with mental ill-health, allowing time for expected large variations in mental health and how and when participants would have anything to report (Graneheim and Åström, 2016).

Many papers did not clearly report how long participants kept diaries, which left it unclear how much data was collected, and how experiences and changes over time might have been captured.

8. Sample Size

Diary study sample sizes vary greatly, with some large sample sizes such as Hagen (2021) with 133 diaries, and Sheridan et al. (2018) with their thematic analysis of data from 70 participants, to the very small, such as Hoffman et al. (2010) and their phenomenological study of five participants. The larger sample sizes of Hagen et al. (2021) and Sheridan et al. (2018) were facilitated by being embedded in intervention studies with large numbers of participants. In intervention studies, sample sizes were typically guided by interventions being investigated and how many participants the intervention had or needed (e.g. Canella et al., 2019). Matthews and Williamson (2016), reflected that there was significant variation in diary length, content, and structure, but that with their sample of ten participants, the data was rich and in-depth. Sample size in all qualitative research depends on the underlying epistemological approach and methodology, and the included papers largely reflected this, rather than specific discussions about diary data and sample size.

9. Diary Structure and Guidance

To support participants with providing relevant data, many studies gave participants diary keeping guidance and prompts to respond to in their diary entries. Most papers provided general descriptions only - see Table 1 (Electronic Supplementary Material 1) for a full list of the guidance used for each study. For example, Stelter et al. (2009) mentions that the diaries provided to participants contained introductory text, but did not specify what this involved. Most asked participants to report in general on the events or experiences that were the focus of the study, including Halliday et al. (2022), who asked participants to record general reflections on their week. Some researchers asked participants for a more specific focus in their diary entries, such as asking for

thoughts and feelings (Gilbert & Irons, 2004), or thoughts, feelings, routines, and experiences around the use of the trial drug (Canella et al., 2019). Nine papers did not report using any guidance or prompts for diaries.

One study used a hybrid method; Lundgren et al. (2018) asked participants to write freely on what was important to them, but provided some (unreported) prompts for participants to respond to if they felt stuck. Finally, four studies included diaries that were unsolicited at the time of writing, where participants had provided their diaries to the researchers to support analysis (Claydon et al., 2018; Gentile, 2006; Hoffmann et al., 2010; Somer & Weiner, 1996). Somer and Weiner (1996) and Gentile (2006) used diaries kept by participants before the study as the sole data for analysis, so the data did not contain any prompting or shaping by the researchers, and provided vast amounts of detailed data to investigate experiences of trauma and eating disorder (Gentile) and whether early signs of dissociation were identifiable (Somer and Weiner).

Overall, guidance and prompts need to be open enough to put participants in control of what is recorded, ensuring the power of data collection is still in their hands, and to facilitate open and unconstrained data (Gill et al., 2016). Too open a structure may generate a wide variety of responses and topics that may ultimately be of little relevance to the research (Graneheim & Åström, 2016). Additionally, where diary prompts and guidance are not reported, the reader is left wondering what participants were responding to, and how these questions and guidance shaped the resulting data – introducing uncertainty about the trustworthiness of the study findings.

10. Additional Data Collection Methods

Several studies use qualitative diaries to complement other data collection within the study, such as interviews, questionnaires, or focus groups. Nine studies relied solely on diary data, 23 used diaries and interviews, and the rest used diaries alongside other data collection methods, such as focus groups, transcribed therapy sessions, photos, or questionnaires. See Table 1 in Electronic Supplementary Material 1 for details of which study used each method and how.

The use of diaries to support interviews varied. Some used the diary as a form of topic guide for the interview (Long et al., 2016), as a memory prompt (Jordan et al., 2020), or to provide triangulation for interview data (Claydon et al., 2018). Others, such as

McDermott et al. (2019) used a post-diary interview to explore in more detail the meanings of interactions reported in the diaries. Combining diaries with other data collection methods offers potential to utilise their respective strengths, for example, the capacity of diaries to elicit rich, immediate data and of interviews to generate spontaneous responses and discussion (Craig et al., 2017). Incidents and experiences may be recalled differently in an interview to how they were reported in the diary, providing insight into how they are processed and reflected on by participants (Mackrill, 2009).

For nine studies, diaries were the exclusive data collection method, with some of these highlighting the volume, depth, and detail of data provided (e.g. Thomas & Lovell, 2015; Craig et al., 2017). Sheridan et al. (2018) argue that using this approach can provide all participants in larger studies equal opportunity to record their experiences, which may not be possible using interviews or other methods.

Analysis and evaluation

This final section reviews analysis approaches in the included studies, as well as challenges and strengths to using QDMs.

11. Analysis method

Analysis of diaries varied, with Content Analysis (13 studies) and Thematic Analysis (11 studies) being most popular. Five used Narrative Analysis, four IPA, and three Grounded Theory. For seven studies, the analysis approach was not explicitly labelled, instead presented as, for example, qualitative summaries (Gilbert & Irons, 2004), or psychoanalytic exploration (Gentile, 2006). Two papers specified that diaries themselves were not analysed, as they had been used only as topic guides for interviews (Long et al., 2016; Wallis et al., 2020).

Halliday et al. (2022) described using a thematic analysis approach initially, and then followed with a narrative approach due to concerns that thematic analysis alone would not capture the nuances of the individual narratives over time. Few others reflected on how the temporality of diary entries influenced their approach. With diary data collection taking place over time, some papers discussed considerations around when

analysis should also take place. Electronic data collection provided some advantages for this, for example, Craig et al. (2017) used email for their data collection, which allowed them to analyse diaries as they were submitted, and then send follow-up questions to participants. Metsäranta et al. (2019) invited participants to submit diary entries electronically, and researchers read entries for risk and safeguarding issues weekly, but it seems that analysis took place at the end of the data collection period.

Practical considerations may determine when analysis can take place - such as in Friedrichsen et al. (2014), where paper diaries were collected at the end of the study. Friedrichsen et al. reflect that while they used Grounded Theory for analysis, they could not use constant comparison during analysis as it was completed at the end, and that as a result their analysis did not reach the point of saturation.

12. Challenges of qualitative diary methods

Fourteen papers provided reflections on the challenges associated with using qualitative diary methods. Some of these have already been mentioned where relevant above. Several papers reported challenges with participant engagement. Matthews and Williamson (2016) and Sheridan et al. (2018) report that there was considerable variation in diary content, length, and structure, with Sheridan suggesting that this could introduce bias. Gilbert and Irons (2004) reported that all participants experienced problems in keeping diaries over six weeks - e.g. losing them, forgetting to fill them in, which Lundgren et al. (2018) also reported. Metsaranta et al. (2019) found that despite SMS reminders, participation declined after the first week. Gilbert and Irons (2004) therefore suggested their data was unreliable and advised using shorter time periods or more frequent sampling points. Kragh et al. (2017) reported that most participants did not want to keep a diary at all.

Some of the difficulties around engagement were reported to be due to the mental health difficulties experienced by participants. Gill et al. (2016) stated that participants who were very disabled by illness, or who had difficulties expressing themselves, provided less detail in their diaries. They also reported that unspecified long term effects of illness made some participants unable to keep a diary for the full period, which was a month, and that physical side effects of medication made writing difficult some participants. Metsäranta et al. (2019) also found that those who did not end up using the diary were those experiencing more severe mental health difficulties.

Several authors reflected on the impact of the diary methodology on the study findings. Lundgren et al. (2018) stated that collecting diaries at the end prevented researchers from asking follow up or clarifying questions. They also noted that participants tended to write more in their diaries during the first half of data collection, and urge caution with descriptive analysis of time points because of this. Sheridan et al. (2018) reflect that due to their large sample size, they did not apply the concept of saturation during their thematic analysis of diaries, which, they suggest, may limit transferability. Gill et al. (2016) acknowledged that the practicalities of analysing large quantities of data made them limit their sample size (to 19).

In their study of depression in long-term-care residents, where participants kept a written, prompted diary for one week, Pope et al. (2006) found that while around half of participants experienced keeping the diary as positive, the other half had more negative experiences; reasons for this included physical health difficulties, and difficulties around expressing emotions, while some simply reported being relieved when the study was over. Sheridan et al. (2018) also reflected that motivation and health problems could be challenging for some participants, and recommended alternative diary formats to suit different participant needs. Metsaranta et al. (2019) reported that significantly more girls used the diaries than boys, and this was reflected across the included studies, with 73% of participants being women or girls (where gender was reported); it is unclear if this is overall due to inclusion criteria or participant preferences.

13. Strengths of qualitative diary methods

Many of the included papers reflected on the strengths of using qualitative diary methods. Rich insights into participants' thinking, emotions, and self-knowledge were commonly mentioned (Friedrichsen et al., 2014; Lev-Wiesel, 2006; Thomas & Lovell, 2015). Mackrill (2007) also highlighted the value of diaries in providing both real time and retrospective insights into participants lives, where diaries were used to reflect on current and past experiences. Lundgren et al. (2018) report that diaries meant that continuous struggles were captured over time, which may have been forgotten by the end of the intervention, allowing them to gain a more nuanced understanding of how participants' experiences change, and how processes unfold, over time.

The positive impact for participants of keeping diaries was also noted. Craig et al. (2017) reported that participants found increased awareness and understanding of

their voice-hearing experiences, while Gilbert and Irons (2004) observed that participants' diaries of self-criticism helped them understand just how self-critical they were. In their study using audio diaries, Sabner and Arnold (2021) reported that the audio diary format enabled participants to freely talk through their mental health difficulties and create their own narratives. They attributed this to the anonymity of recording audio notes, and highlighted their value in gaining unfiltered, honest insights.

The benefits of qualitative diary methods on the trustworthiness and credibility of the study findings were much discussed. Where diaries were used alongside interviews and other methods, they were seen as adding a valuable real-time picture of experiences that provided a source of triangulation and improved the credibility and confirmability of findings (Claydon et al., 2018; Kragh et al., 2017; Voriadaki et al., 2015). Gill et al. (2016) stated that participants' accounts of how they constructed meaning in their lives generated high levels of trustworthiness in the data. Upthegrove et al. (2016) and Wallis et al. (2020) concluded that the information was less 'contaminated' by researcher questions or outcome scales, providing a more credible representation of participants' experiences.

Finally, Graham et al. (2021) suggest that insights captured on the cognitions and emotions around daily management of binge eating highlight the value of qualitative diary approaches in understanding individual variations in triggers, outcomes, and motivations. Graham et al. also argue that their digital platform for diary entries supported ease of participation and low burden of the research for both participants and researchers.

Discussion

This review outlines the many aspects of conducting a qualitative diary study, including the preliminary decisions, such as whether QDMs are the best way to answer the research question for participants and researchers, to the building blocks of a qualitative diary study - formats, prompts and guidance, timelines, and other data. It highlights the strengths of QDMs, particularly in terms of insights into participants' minds and lives, and credibility and trustworthiness of data collected over time. The review has also highlighted several aspects of QDMs where conduct, or reporting of conduct, needs some improvement. Overall, the review illustrates that QDMs are an excellent method for investigating mental health difficulties, but that these type of studies need to be conducted

and reported transparently if their findings are to be trustworthy and impactful. It is noteworthy that there were a number of papers included in the review that met the criteria, but provided very limited data for the review (Hall et al., 2020; Li et al., 2019; Mackrill, 2007, 2008a, 2008b, 2011; Rungreangkulkij et al., 2011; Thomson et al., 2020; Thupayagale-Tshweneagae & Mokomane, 2014).

Many papers lacked discussions around how design decisions were made - such as intervals and timespan of diaries. There was overall a lack of reported PPI involvement in the planning and decision making of the QDM studies included, which the authors of this review consider to be an essential part of QDM research. Patient involvement in research is particularly in the context of considering any negative impacts of diary keeping on the participant population, some of which have been explored by Pennebaker and Chung (2011) in the context of expressive writing. Additionally, there were few details around the prompts and guidelines participants were responding to in their diaries, which is concerning when these, responded to at multiple timepoints across the study, shape the data collected.

Some studies in this review highlight the benefits of electronic data collection in qualitative diary research (especially Craig et al., 2017; Halliday et al., 2022). Apps for data collection have been largely overlooked by the qualitative community (Do & Yamagata-Lynch, 2017) even while they have become mainstream within quantitative research, where they are commonly used within EMA/ESM research (van Berkel et al., 2018). App data collection has many advantages, enabling multiple formats within the same diary and automatic reminders to complete diary entries. Diaries that are easy to complete, have some degree of flexibility, and do not require participants to carry additional equipment around with them are more likely to support engagement and address some of the challenges of QDMS found by some of the included studies, such as losing paper diaries or simply forgetting to complete them. Findings from quantitative research support the acceptability and preferability of electronic data collection methods (Green et al., 2006; Weigold et al., 2013), and participant engagement is typically higher when electronic devices already owned by participants are used for data collection (Berkman et al., 2014; Colombo et al., 2018). However, digital exclusion (DiMaggio et al., 2004) must also be considered and understood in reference to the participant population, and where possible alternatives should be offered to support access to and engagement in research.

Despite a reported value of QDMs being the capturing of changes over time, very few included papers discussed how to analyse elements of time and longitudinality in the data. Few papers used narrative analysis, which would explicitly address this, and

thematic and content analysis types were most common. There are many ways to respond to these methodological issues. Framework analysis can be used to support longitudinal qualitative research, and Lewis (2007) highlights the different layers of analysis and insight gained with this kind of data, looking at theme, case, and group analysis. Thematic trajectory analysis (Spencer et al., 2021) provides a way of conducting thematic analysis to take into account dynamic temporal aspects of change over time. Grossoehme and Lipstein (2016) describe an approach to trajectory analysis that can be incorporated into any methodology and can allow comparison of participants at multiple timepoints, or the following of individual trajectories across the whole data collection period. Essentially, there are many approaches to capturing changes over time in diary data, and the approach taken must be outlined to support confidence in the study findings. Similarly, where diaries are used alongside other data collection methods, consideration is needed over how to integrate the in-the-moment data from diaries with other retrospective perspectives - and this was largely missing from the included studies.

This review was limited to intervention and experiences of mental health difficulties research, and the search terms may not have captured all qualitative diary studies or those using more innovative methods that come under the umbrella of QDMs but use different terminology. Limiting the review to the mental health field may mean that good practice examples and learnings around QDMs from other fields were excluded that may have also been applicable to mental health research. Nonetheless, the review provides an overview of how QDMs can be used and a solid starting point for anyone considering incorporative qualitative diary aspects into their research. While the current review does not consider participant experiences and preferences around QDM research, these are explored in a subsequent paper by the authors, where considerations of audience, communication, and benefits and challenges of QDMs are discussed from the perspective of participants who have taken part in QDM research (McCombie et al., 2023).

To address the lack of consistency in conduct and reporting in QDM papers, we have included a checklist of decisions and reporting items for conducting a QDM study, found in Electronic Supplementary Material 2. This is intended as a template from which to support design and decision making in qualitative diary studies, based upon the findings from this review, and complements more generalised qualitative reporting checklists by outlining considerations specific to evaluating QDM research. Future research to solidify these reporting guidelines using Delphi methods would be valuable to further support rigorous use and reporting of QDM research.

Conclusions

This paper has provided a comprehensive overview of the use of qualitative diary methods in mental health research. Key options, decisions, and implications of each are reviewed - from whether QDMs are an appropriate method to address a particular research question, to decisions needed in study setup stages, analysis of diary data, and potential challenges of the method. The strengths of the method, for participants, researchers, and the knowledge base alike, are clear. The issues and considerations outlined in this paper support researchers using this method to make clear and justifiable decisions around study design and conduct. We hope that this paper and the checklist for qualitative diary research will go some way to making QDMs a more accessible research method for both quantitative and qualitative researchers working to improve understanding of mental health.

Supplementary Materials

- ESM 1. Table 1 (Supplementary Material - Table 1.docx)
Descriptions of included papers
- ESM 2. Table 2 (Supplementary Material - Table 2.docx)
Checklist for conducting and reporting qualitative diary methods in mental health research
- ESM 3. Search strategy (Supplementary Material – Search strategy)

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Table 1: Table summarising details of papers included in the review

	Authors and year	Study title	Study aims	Objective of diary	Number of participants, gender, age range, and ethnicity (where reported)	Diary administration	Diary guidance and prompts	Other study components and how diaries fit with them	Analysis methods; epistemological approach taken (where reported)
1.	Canella, Bachman, Wolfensberger, & Witt (2019)	Patients' experiences attributed to the use of Passiflora incarnata: A qualitative, phenomenological study	Understanding the therapeutic effects of Passiflora Incarnata for treatment of anxiety and sleep problems.	To capture patients' thoughts, feelings, and perceptions of Passiflora Incarnata.	8 (7F, 1M) Mean age 62 ±9 (standard deviation) Ethnicity not reported.	Paper, kept for two days.	Participants asked to detail their daily routines, thoughts, perceptions, and experiences of using Passiflora Incarnata.	Baseline questionnaires at the start of the trial period, diary kept at week 3 for 2 days, and semi-structured interviews 6-8 weeks after baseline.	Diaries and interviews analysed using a mixture of content analysis, narrative analysis, and documentary method.
2.	Claydon, Davidov, Zullig,	Waking up every day in a body that	Understanding concerns	Participants were asked to	15 (F), 4 provided diaries.	Diaries were per-	None – diaries unsolicited at the time of writing.	Interviews were primary component, with diaries used to triangulate interview data.	Document analysis for diaries – quotes from diaries captured and

	Lilly, Cottrell, & Zerwas (2018)	is not yours: a qualitative research inquiry into the intersection between eating disorders and pregnancy	and barriers to care of prenatal women with eating disorders.	share diaries from the time they were pregnant to help triangulate their interview data.	Age range 25-55 White (14) Hispanic (1)	sonal diaries kept by participants before the study began.			used in analysis; feminist theory and a transformative framework.
3.	Craig, Cameron & Longden (2017)	Work-related experiences of people who hear voices: An occupational perspective	Understanding experiences of voice-hearing on working lives, and the strategies people use to manage negative impacts of voice hearing.	To allow participants to reflect on responses, encourage more open disclosure, reduce cost to researcher and participant, and enable participation where location and disability might otherwise prevent it.	5 (F) Age range 24-61 Ethnicity not reported.	Participants emailed diary entries 3-6 times over 3 weeks, with researchers sending follow-up and clarification questions between entries.	Detailed diary guidance was sent to participants, encouraging them to write whenever it suited them and as often as they liked.	Diaries were the only data collection method.	Thematic analysis of diary entries; phenomenological approach within an interpretivist paradigm.

4.	Denno, Wallis, Caldwell, Ives, Wood, Broome, Mallikarjun, Oyeboade & Uptegrove (2021)	Listening to voices: understanding and self-management of auditory verbal hallucinations in young adults	Understanding young adults' experiences of auditory verbal hallucination, with a focus on their understanding and self-management of the hallucinations.	Diaries used to facilitate recall and reflection. Photos used to allow emotional dialogue about concepts that may be difficult to verbalise.	35. Gender not reported. Age range 17-37. Ethnicity reported as "predominantly White" (p.3)	Participants were asked to make written diary entries and take photos for a week before an interview.	Participants were asked to make entries about AVH episodes, including the hallucination, their response, and to take photos that represented or evoked emotions related to their experiences.	Diaries and photos were used as participant-led topic guides for walking interviews. The interviews themselves were then analysed rather than the diaries.	Content analysis.
5.	Deslandes, John & Deslandes (2015)	An exploratory study of the patient experience of pharmacist supplementary prescribing in a secondary care mental health setting	To explore experiences of patients with mental illness being managed by a pharmacist supplementary prescriber	Diaries were used to allow patients to record events as they happened, to reduce the need to rely on memory during interviews.	11 (8F, 3M) Age range reported as 18-50+ Ethnicity not reported.	Paper booklet, with diary-keeping guidance at the front.	Participants were asked to record prescribing events.	Semi-structured interviews "with reference to the diaries" followed the diary keeping period.	Diaries analysed with thematic content analysis. Interviews analysed with thematic analysis.

			in a secondary care outpatient setting.						
6.	Fenwick, Toohill, Slavin, Creedy & Gamble (2018)	Improving psychoeducation for women fearful of childbirth: Evaluation of a research translation project	To evaluate effectiveness of a midwife-delivered intervention for women fearful of childbirth, and the experiences of the midwives delivering it.	No rationale given for use of diaries. Diaries recorded general experience and reflections on delivering the intervention and the perceived response of participants.	22 (F) – 6 completed diaries. Age range 29-68 Ethnicity not reported.	Printed booklet with requests for specific information on the women receiving the intervention, and space for reflections.	Participants were asked to record issues discussed with the women, reflections on how the women responded to the intervention, and reflections on organisational enablers and barriers to counselling.	Midwives completed surveys before and after attending training, quantitative measures were used to determine the effectiveness of the intervention, and telephone interviews were conducted with the midwives after they had delivered the intervention.	Content analysis.
7.	Friedrichsen, Hajradinovic, Jakobsson, Sundberg, Axmacher Jonsson & Milberg (2015)	Prolonged grievers: A qualitative evaluation of a support group intervention	To study how a prolonged grief therapy programme influenced	To record participants' experiences after each group session, including how the session affected	11 (F) Age range 33-71 Ethnicity not reported.	A paper folder was given to each participant to use as a diary, with entries once a	Participants were asked to record their experiences after each group session, within 24 hours of the session.	Interviews took place after the diary-keeping period. Interviews were to follow up on the diaries, but it is not clear how the diaries actually informed the interviews.	Grounded theory. Diaries analysed before the interviews.

			social processes and experiences in a group intervention.	them, feelings that came up, and what they learned.		week for 2-6 months.			
8.	Gentile (2006)	Timing development from cleavage to differentiation	Psychoanalytic investigation of one woman's diaries kept over 18 years detailing her severe trauma and eating disorder.	Personal diary kept before the study.	1 (F) Age of diary keeping from 14-32 years. Ethnicity not reported.	Diaries were in the form of notebooks kept (unsolicited) by the participant in the years before the study took place.	Diaries were unsolicited, with entries undated.	Diary is the sole aspect of the study.	Analysis described as psychoanalytic exploration.
9.	Gilbert & Irons (2004)	A pilot exploration of the use of compassionate images in a group of self-critical people	Understand and investigate self-criticism and the use of compassionate imagery as	To explore triggers and forms of self-criticism.	9 (7F, 2M) Age and ethnicity not reported.	Paper diaries were given to participants and they recorded entries daily for two weeks,	Diary guidelines prompted participants to describe the types of self-critical thoughts they had, events leading to them, and how these thoughts made them feel.	Diaries also included quantitative questionnaires.	Analysis method unspecified – diary entries qualitatively summarized.

			an intervention in people attending a depression support group.			then weekly for six weeks.			
10.	Gill, Morrall & Knapp (2015)	Living with schizophrenia and atypical medication	To explore lived experiences of people with schizophrenia who take atypical antipsychotic medication.	No specific justification or objective given for using diary methods.	19 (6F, 13M) Age range 28-56 years. Ethnicity not reported.	Paper diaries, kept daily for one month.	Loose instructions asked participants to record their daily experiences and the differences they felt their condition made to their lives.	Interviews midway through the diary period and at the end. Interviews clarified and validated diary entries, and gave participants an opportunity to expand on what was written.	Thematic content analysis, diaries and interviews analysed; phenomenological approach.
11.	Graham, Neubert, Chang, Liu, Fu, Green, Komfield & Nicholas (2021)	Applying User-Centered Design Methods to Understand Users' Day-to-Day Experiences Can Inform a Mobile Intervention for Binge	To understand how individuals with obesity and binge eating experience these problems in their	Diaries were chosen as the best way to learn about people's experiences of binge eating as they occur in the context of	22 Age and ethnicity not reported but stated as selected to ensure a diverse cohort with more females than males	Video and text responses submitted to an online and mobile platform over one month.	Diaries were split into nine parts, with different questions, including open-ended questions, in each.	Diaries were the sole data source.	Thematic analysis.

		Eating and Weight Management	day-to-day lives, to inform development of a mobile intervention.	their everyday lives.	due to the relative prevalence of binge eating disorder.				
12.	Graneheim & Åström (2016)	Until death do us part: Adult relatives' experiences of everyday life close to persons with mental ill-health	To understand adult relatives' experiences of everyday life close to a person with mental ill-health.	No specific justification or objective given for using diary methods.	13 (12F, 1M) –9 completed diaries. Age range 45-85 Ethnicity not reported.	Paper diaries, kept for two years, event-contingent.	No reporting of instructions. Participants wrote varied entries.	Four participants (who had not kept diaries) were interviewed (narrative interviews) after initial diary analysis to validate and expand on diary findings.	Content analysis.
13.	Gwinner, Knox & Brough (2013)	Making sense of mental illness as a full human experience: Perspective of illness and recovery held by people with a mental illness living	To explore the complexity of mental illness and recovery as a full human experience.	Diary used as part of a participatory action research design, within which participants wished to engage in a continual interpretative	8 (3F, 5M) Age and ethnicity not reported.	Visual diaries, made by the artist-participants, time period unclear.	Diary instructions not given to participants.	Interviews at the beginning, middle, and end of the data collection period.	Analysis method unclear; symbolic interactionism served as the theoretical framework.

		in the community		relationship with their data.					
14.	Hagen, Skjelstad & Nayar (2021)	"I Just Find It Easier to Let Go of Anger": Reflections on the Ways in Which Yoga Influences How Young People Manage Their Emotions	Understand how yoga influences managing emotions in disadvantaged young people with mental health challenges.	Diaries were kept to supplement interview data.	133 students took part in the intervention and diary keeping. Nine provided interviews (5F, 4M). Ethnicity not reported.	Written diaries kept for the duration of the eight week course.	Instructions were given by different yoga instructors, therefore varied in their wording. They were generally asked to share their experiences relating to practicing yoga.	Interviews after the diary keeping period.	Thematic analysis.
15.	Hall, Munk, Carr, Fogarty, Cant, Holton, Weller & Lauche (2020)	Maternal mental health and partner-delivered massage: A pilot study	Assess feasibility and acceptability of a partner-delivered massage intervention for pregnant women with	No specific justification or objective given for diary aspect.	44 (F) Age range 19-41 Ethnicity not reported.	Online diaries kept for the duration of pregnancy from 28-32 weeks onwards.	Diary instructions not reported, participants recorded experiences with the intervention.	Interviews after giving birth on the experience of the intervention.	Content analysis.

			anxiety and depression.						
16.	Halliday, Holt, Khan, Ward, Wheeler & Sadler (2022)	'A lot of small things make a difference'. Mental health and strategies of coping during the COVID-19 pandemic	Exploring how mental health was affected during Covid-19 lockdowns.	Diaries were selected as the methodology as they have been used in previous crisis situations in England.	15 (10F, 3M, 2 not stated) Age 30-70 White-British (9), Black African and White (1), Pakistani (3), not stated (2).	Online diaries kept weekly, with a link sent to participants once a week for eight weeks. Word documents were also an option.	Closed questions and open, free-text questions to share general reflections on the week.	Weekly telephone calls, which were not recorded.	Thematic analysis.
17.	Hoffman, Myburgh & Poggenpoel (2010)	The lived experiences of late-adolescence female suicide survivors: 'A part of me died'	Exploring the experiences of people who have lost someone to suicide.	Diary was provided by one participant after they were invited to share diaries from the time of losing someone. Diaries elicited as	Five (gender not reported) One provided a diary. Age range 18-22 Ethnicity not reported	Diary was personal diary of a participant from a time period prior to the study taking place, kept for around	Unsolicited diaries.	Interviews were the main data collection method, aided by a participant-created collage of their lived experience.	Phenomenological method (from Giorgi 1985). Interviews and diary materials analysed.

				they might reduce social barriers in describing stigmatised experience that might be present in interviews.		two years at the time after losing someone to suicide.			
18.	Jordan, Marczak & Knibbs (2020)	'I felt like I was floating in space': Autistic adults' experiences of low mood and depression	Exploring how autistic adults experience depression.	Diaries were chosen to aid interviews because they are less intrusive and may support communication for people who struggle with verbal expression.	8 (1F, 7M) Age range 19-51 Ethnicity not reported	Paper diaries, kept daily for one week.	Diary semi-structured with participants encouraged to convey their experience of mood.	Interviews took place after the diary keeping period, participants were encouraged to reference their diaries during the interview.	Interpretative phenomenological analysis of diaries and interview transcripts.
19.	Kragh, Norden Møller, Schultz Wihlborg, Martiny,	Experiences of wake and light therapy in patients	Explore people with depression	No justification given for	13 (5F, 8M) –5 kept a diary. Age range 18-66	Paper diaries kept over the course of a 9	Diary instructions unclear.	Interviews took place after the diary keeping period. The researcher read the diary before each	Content analysis.

	Roj Larsen, Videbec & Lindhardt (2017)	with depression: A qualitative study	ons' experiences with wake and light therapy, and factors related to adherence.	use of diary methods.	Ethnicity not reported	week intervention.		interview to identify areas for elaboration in the interview.	
20.	Lev-Wiesel (2006)	Intergenerational transmission of sexual abuse? Motherhood in the shadow of incest	Exploring mechanisms behind intergenerational transmission of childhood sexual abuse, from the perspectives of mothers who had been abused and then sought treatment after their children	The authors were concerned interviews would interfere with the therapeutic process, so clinicians were interviewed instead of the clients, but the clients kept diaries throughout treatment which clinicians	Five clinicians, reporting on 24 mothers who were attending therapy. 19 mothers kept diaries. Age and ethnicity not reported.	Paper diaries kept over the course of therapy, not stated how long this is.	No diary instructions reported.	Interviews with clinicians took place after the diary keeping period.	Narrative and story analysis.

			were abused.	then referenced in interviews.					
21.	Li, Keady & Ward (2021)	Transforming lived places into the connected neighbourhood: a longitudinal narrative study of five couples where one partner has an early diagnosis of dementia	Understanding the meaning, construction, and place of neighbourhood in people with dementia and their caregivers, with a wider aim of shifting towards a deinstitutionalised perspective.	Diaries were places for participants to explain how often and why they went to places, with whom, and what the place meant to them.	Five people with dementia (4F, 1M) and their partners (4M, 1F). All White British.	Diaries kept over the year-long study, format unclear.	No diary instructions reported.	Diaries were kept as part of a longitudinal narrative approach involving interviews, co-constructed maps, and photos.	Narrative analysis of all study data; naturalism paradigm used.
22.	Long, Briggs, Long & Astin (2016)	Starting where I am: a grounded theory exploration	Exploring the impact of mindfulness on	Diaries were kept in order to facilitate identification	41 total participants (33F, 8M) - 20 kept a diary.	Paper diary kept over one week prior	No diary instructions reported.	Interviews took place after the diary keeping period. Diaries were used as facilitators for interview discussion only.	Grounded theory (Charmaz), diaries not analysed; constructivist approach.

		tion of mindfulness as a facilitator of transition in living with a long-term condition	experience of living with a long term physical or mental health condition.	cation of experiences of mindfulness.	Age range not reported. White British (38) White other (2) Mixed White/Black African (1)	to an interview.			
23.	Lundgren, Garvin, Kristensson, Jonasson & Thylén (2018)	A journey through chaos and calmness: experiences of mindfulness training in patients with depressive symptoms after a recent coronary event – a qualitative diary content analysis	Exploring experiences of mindfulness practice among patients with coronary artery disease and depressive symptoms.	Diaries kept in order to capture immediate experiences of mindfulness, to facilitate recall, and because diary methods can be suitable when exploring change over time.	12 (4F, 8M) Age range 56-63 Ethnicity not reported.	Notebook diary provided by researchers, with participants asked to make an entry after each home practice session over the course of an 8-week mindfulness-based stress reduction course.	Detailed diary instructions provided, with participants encouraged to write freely but to reflect on prompting questions if they struggled to write.	Diaries are the sole data source.	Content analysis

24.	Mackrill (2007, 2008, 2008, 2009, 2011)	Using a cross-contextual qualitative diary design to explore client experiences of psychotherapy; Exploring psychotherapy clients' independent strategies for change while in therapy; Pre-treatment change in psychotherapy with adult children of problem drinkers: the significance of leaving home; A cross-contextual construction of clients' therapeutic practice; The	To explore and understand processes taking place during psychotherapy.	Diaries used as a means to gather data both about sessions and the rest of participants' lives.	4 patient participants (3F, 1M); 3 therapist participants (1F, 2M) Age and ethnicity not reported.	Paper diaries kept by participants for ten sessions.	Detailed diary instructions given to aid structure in diary entries. Firstly asking participants to describe experiences only, then asking them to consider explanations and other reflections after descriptions. Participants were asked to describe the time spent between the sessions.	Recordings of therapy sessions were also used in the analysis.	Analysis process described but not attributed to any referenced qualitative analysis method; approach driven by theory of persons in social practice.
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		case of “Jane and Joe”: a diary-based, cross-contextual case study							
25.	Matthews & Williamson (2015)	Caught between compassion and control: exploring the challenges associated with inpatient adolescent mental healthcare in an independent hospital	To understand challenges faced by healthcare assistants working on secure adolescent mental health wards, how they manage these challenges, and the impact on their health and well-being.	Diaries used to allow events to be captured in real-time.	10 (7F, 3M) Age range 21-43 Ethnicity not reported.	Paper diaries, completed for a minimum of six shifts.	Participants were given several open-ended prompts focused on experiences and challenges.	Five participants completed an interview after the diary keeping period, during which researchers referred to the diaries they had kept, asking participants to elaborate on areas of interest.	Interpretative phenomenological analysis; critical realism approach.

26.	McDermott, Gabb, Eastham & Hanbury (2019)	Family trouble: Heteronormativity, emotion work and queer youth mental health	To explore how family relationships impact on the mental health and wellbeing of LGBTQ+ youth.	To capture immediate everyday practices and emotions of LGBTQ+ youth.	13 (6 Cis F, 3 Cis M, 1 Trans F, 1 Trans M, 1 other). 9 kept diaries. Age range 17-25. White British (8) Black and Minority Ethnic (4) White other (1)	Paper or online diaries kept once a day for a week.	Prompts invited participants to record family interactions and how these interactions made them feel.	After the diary keeping period, a follow-up interview explored the meanings of the interactions captured in the diary.	Thematic analysis; critical mental health framework putting emotions at the centre of the research.
27.	Metsäranta, Kurki, Valimäki & Anttila (2019)	How do adolescents use electronic diaries? A mixed-methods study among adolescents with depressive symptoms	To describe how adolescents with depression use an e-diary.	Diaries used because they provide self-reflective space and might be useful to adolescents with depression.	47 (45F, 2M) Age range 15-17 Ethnicity not reported.	Diaries kept online over six weeks. Participants were sent SMS message reminders each Monday to encourage them to	Diaries provided prompts for reflection on a different theme each week.	Diaries were the sole data collection source.	Content analysis.

						use the diary.			
28.	Palacios-Ceña, Martín-Tejedor, Elías-Elispu, Gárate-Samaniego, Pérez-Corrales & García-García (2018)	The impact of a short-term cohousing initiative among schizophrenia patients, high school students, and their social context: A qualitative case study	To describe experiences of participants in a short-term cohousing initiative between adolescents and mentally ill patients, designed to reduce stigma, improve understanding, promote mental health, and prevent substance abuse.	Diaries were elicited after the study to provide rich information on personal experiences from the participants' point of view.	51 participants – 5 kept a diary (2 patients, 3 students) Mean age 34.46 ±8.14 (standard deviation) Ethnicity not reported.	Paper diaries.	Not reported – unclear if participants were asked to keep diaries or they were kept unsolicited and provided for analysis.	The study also included informal interviews, letters written by participants, non-participant observations, and focus groups.	Thematic analysis, performed separately on all data types.

29.	Pope, Watkins, Evans & Hess (2006)	The perception of depression in long-term-care residents: A qualitative study using residential journaling	To explore residents' perceptions of depression in long term care facilities, and to determine appropriateness and effectiveness of diary keeping as an investigative tool for researchers, as well as a mental health resource for older adults in LTC facilities.	Diaries give an opportunity to gain subjective data about depression that objective measurements are unable to capture.	24 (17F, 7M). Mean age 82.54 ± 5.55 (standard deviation) Caucasian (24)	Participants were given a notebook and a pen to keep diaries in for one week.	Five open ended questions, details not reported.	Participants were interviewed after the diary keeping week, regarding their experiences of participating in the study.	Grounded theory.
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30.	Rappe, Koivunen & Korpela (2008)	Group gardening in mental outpatient care	To assess the potential benefits of a group gardening intervention for rehabilitating mental health outpatients.	Diaries were used to allow participants to make notes on their experiences of the intervention.	12 (gender not reported) including participants and support workers for the activity Age and ethnicity not reported.	Participants were given a diary, unclear how long each participant kept the diary for.	Participants were asked to make notes about their experiences.	Questionnaires were also used to assess factors including the health-related effects of the intervention.	Content analysis; phenomenological approach.
31.	Rayner, Bowling, Bluff, Wright, Ashworth-Lord & Laird (2022)	A multi-method evaluation of a compassion-focused cognitive behavioural psychotherapy group for people who self-harm	To explore the impact of a compassion-focused Cognitive Behavioural Therapy group for people who self-harm.	Diaries were used to allow participants to record incidents of self-harm.	3 (F) Age range 21-28 Ethnicity not reported.	Diaries were collected on paper, participants were asked to do this for the duration of the 12-week intervention.	Participants were asked to report thoughts and feelings before and after self-harming incidents.	Participants also took part in a focus group after the intervention.	Descriptive methods and thematic analysis.

32.	Reed, Fenwick, Hauck, Gamble & Creedy (2013)	Australian midwives' experience of delivering a counselling intervention for women reporting a traumatic birth	To understand midwives' experiences of learning and delivering a counselling intervention for childbirth trauma.	Diaries were intended as reflective diaries of midwives' experiences.	18 participants (F) – 10 provided diaries. Age range 26-59 Ethnicity not reported.	Diaries were collected by email.	Participants were asked to reflect on their experiences in the diary entries.	Participants were interviewed at four timepoints across the training and delivery period of the intervention, and also discussed the intervention with other participants in an online forum.	Thematic analysis was used for the interviews. The diaries were used to provide clarity around the emerging themes, though it is not reported how this worked.
33.	Rungreangkulkij, Wongtakee & Thongyot (2011)	Buddhist group therapy for diabetes patients with depressive symptoms	To understand and assess the effect of a Buddhist group therapy on people with diabetes and depression.	Diaries were used to see changes in thoughts and emotions across the intervention.	64 (60F, 4M) Mean age 47.0±9.5 (standard deviation) Ethnicity not reported.	A paper diary was kept by each participant throughout the six week intervention, unclear how often participants did this.	Participants were asked to detail perceived changes in thoughts and emotions throughout the intervention.	Group sessions were tape recorded and transcribed, and a quantitative questionnaire, the Nine Question Thai I-san dialects (9Q) was used to assess change in depression.	Content analysis was used to gather descriptive information about participants perception of change, from tape recordings of the group sessions and from diary entries.

34.	Sabaner & Arnold (2021)	Mental Health in the Transition to College: Experiences of Six Low-Income, High-Achieving Students	To investigate mental health changes during the first semester of college.	Diaries were used to record experiences of the first semester of college.	79 students took part in the main study; six (4F, 2M) were selected for this analysis of mental health based on the focus of their diaries being around mental health. Black (3), White (3).	Participants recorded an audio diary, and took a photo with a 2-3 sentence caption, twice a week for 15 weeks.	Participants were sent prompts via SMS message twice a week. Once a week the prompt asked participants to share anything about their experience, the other asked them to share something on a particular topic.	40 participants also took part in 30-minute interviews at the beginning and end of the diary-keeping period.	A narrative inquiry approach was used; post-positivist approach.
35.	Sheridan, O'Keeffe, Coughlan, Frazzer, Drennan & Kemple (2018)	Friendship and money: A qualitative study of service users' experiences of participating in a supported socialisation programme	Exploring the experiences of people with enduring mental health illness taking part in a supported	Diaries were chosen to provide novel insights, as little is known about service users' experiences of supported socialisation.	70 (35F, 35M) Age range 21-74 Ethnicity not reported.	The programme was weekly over a 9 month period, but it is not reported how long participants kept diaries for.	Prompts asked participants to reflect on what went well or not, emotional responses to social activities, whether they had tried anything new, and future socialisation plans.	Diaries were the sole data collection method.	Thematic analysis; essentialist approach underpinned by relativism.

			socialisation programme.						
36.	Somer & Weiner (1996)	Dissociative symptomology in adolescent diaries of incest victims	To understand whether there are adolescent clinical antecedents of dissociative identity disorder (DID).	Diaries from adolescence were used to see if they offer any insight into the development of early symptoms of dissociative identity disorder.	6 (F) – 3 were DID patients, 3 were not. Age range 25-29 Ethnicity of only 3 participants reported: Caucasian (2) Israeli (1)	Diaries were provided by participants who had written them as teenagers.	Diaries were unsolicited at the time of writing so no prompts were used.	Diaries were the sole data collection method.	Content analysis.
37.	Stelter (2009)	Experiencing mindfulness meditation – a client narrative perspective	To understand the experience of a mindfulness meditation course for people with mental health difficulties.	No rationale given for use of diaries.	3 (2F, 1M) Age range 47-65 Ethnicity not reported.	Diaries were written by hand on forms provided by the researchers and posted to the researchers once a week, over 6-8	The diaries provided had introductory text, which is not reported in the article.	Participants were also interviewed three times, at the beginning, middle, and end of the course.	Narrative analysis.

						weeks depending on the length of their intervention.			
38.	Thomas & Lovell (2015)	Anxiety and compulsion patterns in the maintenance of bingeing/purging behaviours by individuals with bulimia nervosa	To explore the daily management of symptoms by patients with bulimia.	Dairies chosen because bulimia symptoms are secretive, and psychotherapy practice dairies are common as means of assessing behaviours and client progress.	12 (11F, 1M) Age range 23-46 Ethnicity not reported.	Diary format not reported. Participants were asked to record vomiting events and their thoughts and feelings around this.	Diary prompts and duration are not reported.	Diaries were the sole source of data.	Thematic analysis.
39.	Thomson, Morse, Elsdon & Chatterjee (2020)	Art, nature and mental health: assessing the biopsychosocial effects of a 'creative green prescription'	To assess the biopsychosocial effects of participating in a combined arts and	To assess the experience of and improvement following the intervention.	26 (13F, 13M) Age range 44-70 White (60%) Black	Diary format not reported. Participants completed weekly dairies with	Guideline questions not reported.	Interviews with intervention facilitators and participants also took place at the end of the intervention.	Thematic analysis.

		museum programme involving horticulture, art-making and collections	nature based museum intervention on adult mental health service users		(30%) Mixed race (10%)	'guideline questions'.			
40.	Thu-payagale-Tshweneagae (2011)	Development and implementation of a peer-based mental health support programme for adolescents orphaned by HIV/AIDS in South Africa	To explore experiences of adolescents orphaned by HIV and AIDS, to inform development of a peer-based mental health support programme.	To accurately capture subjective knowledge of experiences, emotions, and meanings.	15 (Gender not reported) - 8 completed a diary. Age and ethnicity not reported.	Participants were provided notebooks and asked for record experiences over six months.	Participants were asked to record general experiences of being orphaned by AIDS or HIV, as well as record their thoughts, feelings, and experiences after weekly meetings at a day centre.	Some participants also provided photos depicting their experiences, took part in focus groups, and made event history calendars.	Colaizzi's model of data analysis was used to analyse themes from the different types of subjective data; phenomenological approach.
41.	Thu-payagale-Tshweneagae & Mokomane (2014)	Evaluation of a peer-based mental health support programme for	Evaluating a peer-based mental health support	Diaries were chosen as they may include new knowledge or insights	15 (Gender not reported) Age and ethnicity not reported.	Participants were provided notebooks, and asked to record	Participants were asked to record their experiences regarding the intervention program, as well as the emotions that were evoked by their interactions with	Focus groups after the intervention and records of school grades were also used to evaluate the intervention.	Colaizzi's model of data analysis was used to analyse themes from the different types of

		adolescents orphaned by HIV/AIDS in South Africa	port programme for adolescents orphaned by HIV/AIDS in South Africa	into the knowledge gained in specific contexts.		entries after each of 14 sessions of the intervention – not reported not long this was for.	caregivers and other people in their environment.		subjective data; phenomenological approach.
42.	Upthegrove, Ives, Broome, Caldwell, Wood & Oyeboode (2016)	Auditory verbal hallucinations in first-episode psychosis: a phenomenological investigation	To understand the subjective experience of auditory verbal hallucinations in first-episode psychosis.	Diaries were kept to stimulate discussion during interviews.	25 (69% Male) Age range 17-37 White (14) Asian (7) Black (4)	Participants were provided with a notebook and camera, and asked to make entries over one week.	Participants were asked to record experiences of auditory verbal hallucinations, and how these made them feel.	An interview was conducted after the diary-keeping period.	Content analysis; phenomenological approach.
43.	Voriadaki, Simic, Espie & Eisler (2015)	Intensive multi-family therapy for adolescent anorexia nervosa: adolescents' and parents' day-	To understand change processes in multi-family therapy for adolescent	Diaries were included to capture a record of participants' ses-	5 girls with AN, plus 6 mothers and 4 fathers. Girls with AN age range 15-16.	Blank diary booklet provided, participants asked to complete	Instructions asked participants to focus on any changes they experienced in emotion, cognition, or behaviour, and what had probably triggered that change.	Focus groups, rating scales, and researcher observations were also used.	Interpretative phenomenological analysis.

		to-day experiences	anorexia nervosa.	session-to-session reflections.	White British (5 families) Asian British (1 family)	entries once a day over four days.			
44.	Wallis, Denno, Ives, Mallikarjun, Oyebode, Broome & Uptegrove (2020)	The phenomenology of auditory verbal hallucinations in emotionally unstable personality disorder and post-traumatic stress disorder	To explore the phenomenology of auditory verbal hallucinations in people who have non-psychotic diagnoses.	Diaries were used due to the need for in-depth exploration of the subject, unguided by scales and measures developed for schizophrenia and free from longstanding involvement with mental health professionals whose framework may influence communication of such	10 (4F, 6M) Age range 17-31 White British (8) Asian (1) Mixed race (1)	Participants kept paper and photo diaries for one week.	Diary guidelines not reported.	Diaries and photos guided an interview, instead of having a topic guide.	Thematic analysis of interview transcripts; phenomenological approach.

				events.					
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Table 2: Checklist for conducting and reporting qualitative diary methods in mental health research

Topic	Item Number	Guide Questions	Answer – Yes/No/Partly
Suitability of qualitative diary methods			
Research aims	1	Is the use of diary methods clearly explained and justified?	
Participants	2	Is there consideration given to whether diary methods will be acceptable and accessible to participants?	
Ethical issues	3	Are diary-specific ethical issues reported and accounted for?	
Diary design			
Diary format	4	Is the decision behind selection of the diary type used explained, including with reference to participant preference and consideration given to the type of data the method will elicit on the phenomenon of interest?	
Diary administration	5	Is the diary data collection method justified, and procedures clearly described?	
Diary intervals	6	How frequently, and under what circumstances, will participants be completing and submitting diary entries?	
Diary time period	7	For how long will participants be submitting diary entries, and is the length of this time period clearly justified?	
Sample size	8	How many participants were recruited, and how many dropped out during the study? Is the sample size explained?	
Diary structure and guidance	9	What is the structure of the diaries, and are any guidelines or diary prompts clearly reported and explained?	
Additional data collection	10	Are there other data collection methods in the study, and where do diaries fit in with these?	
Analysis and evaluation			
Analysis method	11	Is the qualitative methodology selected justified and clearly described in methods and analysis, and is specific	

		consideration given to how this method will work with longitudinal diary data?	
Challenges	12	Are any challenges or limitations of the diary data or method reported and addressed?	
Strengths	13	Are any strengths of the diary data or method reported and considered?	

Supplementary Material 3: Scoping review search strategy

The search strategy was built around the following terms:

Qualitative, mixed methods, diary, diaries, experience/s, perspective/s, mental health, mental illness, mental wellbeing, psychology, psychotherapy, psychological intervention.

The example search strategy below is based on Medline and Embase databases. Adjustments were made for searching the other databases.

Search type: Abstract, title, keywords searches.

Search terms:

1. (Mental health OR mental well\$ OR mental illness OR psycho\$).ab,ti,kw
2. (Qualitative OR mixed method? OR experience? OR perspective?).ab,ti,kw
3. (Diary OR diaries).ab,ti,kw
4. 1 AND 2 AND 3

