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**EMPIRICAL PAPER**

# Factors affecting the implementation of an outcome measurement feedback system in youth mental health settings

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**Abstract**
**Objective:** Measurement feedback systems provide clinicians with regular snapshots of a client's mental health status, which can be used in treatment planning and client feedback. There are numerous barriers to clinicians using outcome measures routinely. This study aimed to investigate factors affecting the use of a measurement feedback system across youth mental health settings. **Methods:** The participants were 210 clinicians from *headspace* youth mental health services across Australia. They were surveyed on predictors and use of MyLifeTracker, a routine outcome measure. This was explored through three processes: looking at MyLifeTracker before session, using MyLifeTracker in treatment planning, and providing feedback of MyLifeTracker scores to clients. **Results:** Clinicians were more likely to look at MyLifeTracker before session, less likely to use it in treatment planning, and least likely to provide MyLifeTracker scores to clients. Each measurement feedback system process had a distinct group of predictors. Perceptions of MyLifeTracker's practicality was the only significant predictor of all three processes. **Conclusion:** Practically, organisations and supervisors can increase the use of measurement feedback systems through targeted supports.

**Keywords:** MyLifeTracker; measurement feedback systems; youth mental health; routine outcome measure; progress monitoring

**Clinical or Methodological Significance:** The study investigates the factors that affect the implementation of measurement feedback systems in a naturalistic youth mental health setting. It examines the use of MyLifeTracker, a session-by-session mental health outcome measure, across *headspace* centres in Australia. The study identifies clinician characteristics, clinician attitudes, and organisational supports as important predictors for clinicians use of measurement feedback systems. Specifically, it provides an in-depth examination of three distinct measurement feedback system processes: looking at MyLifeTracker before session, using MyLifeTracker in treatment planning, and providing feedback of MyLifeTracker scores to clients. Young people have high rates of deterioration during therapy, treatment drop-out, and missed appointments. As such, the implementation of MyLifeTracker in measurement feedback systems targets a critical developmental period where this type of monitoring and feedback during treatment may be particularly useful.

The development of session-by-session client outcome measures has enabled the implementation of measurement feedback systems (MFS), also known as routine outcome monitoring (ROM), progress monitoring, and feedback-informed treatment (FIT). These are platforms that allow clinicians to receive quantified feedback on a client's progress to use in-session and help guide treatment planning (Boswell et al., 2015; Miller et al., 2015). MFS require a process that is efficient for the client and allows instant feedback to the clinician. Clinicians receive regular up-to-date snapshots of a client's

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mental health status, showing any changes since past sessions. Clinicians can monitor if clients are progressing or deteriorating between sessions and adjust treatment planning accordingly (Boswell et al., 2015). Such an approach can also allow clinicians to discuss measurement results in session and provide progress feedback to clients, which can be a powerful way to promote shared decision making (De Jong et al., 2014). MFS have been shown to improve communication between client and clinician, increase the accuracy of diagnosis, enable quicker adjustments to treatment planning when required, provide stronger outcome effects, and improve the efficiency of treatment (Bickman et al., 2011; Carlier et al., 2012; Janse et al., 2017). MFS are particularly useful for clients "not on track" (NOT) or who are at risk of treatment failure, with feedback systems significantly reducing deterioration rates and increasing rates of clinically significant improvement (Shimokawa et al., 2010).

MFS are important because clinicians have been shown to have low accuracy rates in predicting client deterioration during therapy when using their judgement alone (Hannan et al., 2005; Hatfield et al., 2010). They tend to have a self-assessment bias which serves to maintain a positive self-image by over-estimating treatment progress (Parker & Waller, 2015). Walfish et al. (2012) explored clinicians' ratings of their own clinical skills and client outcomes, showing that they rated their skills on average at the 80th percentile and that all clinicians rated themselves above the 50th percentile. Additionally, clinicians on average believed that 77% of their clients improved as a result of their therapeutic intervention, which is well above the one-third proportion of clients shown to improve in naturalistic settings (Walfish et al., 2012). Formal quantified feedback provides a structured method for reducing this self-assessment bias (Macdonald & Mellor-Clark, 2015), and deliberate practice, incorporating the use of MFS, can improve the effectiveness of clinicians (Chow et al., 2015).

Despite the benefits of MFS becoming more widely known and increased training in the use of MFS in clinical programmes (Overington et al., 2015), clinicians still have a typically low completion rate of routine outcome measures, which suggests difficulties with the administration of measures and their clinical use (Batty et al., 2013; Hatfield & Ogles, 2004; Johnston & Gowers, 2005). Interestingly, clinicians that primarily used Cognitive Behavioural Therapy (CBT) were more likely to view outcome measures as clinically useful and practical compared to practitioners of other therapeutic orientations (Jensen-Doss et al., 2018). Clinicians who had recently graduated were also more likely to be aware of routine outcome measures compared to

those with more years of experience, while clinicians with higher-level degrees were more likely to use routine outcome measures compared to those with lower-level degrees (Ionita & Fitzpatrick, 2014). Clinicians in private practice were less likely to administer outcome measures, saw less benefit in monitoring and feedback, and were less likely to find measures clinically useful and practical compared to clinicians working in institutional settings (Hatfield & Ogles, 2004; Jensen-Doss et al., 2018). One of the strongest predictors of any outcome measure use was fewer years of professional experience, which was a significant unique predictor even when other demographic characteristics, professional characteristics, and attitudes towards MFS were accounted for (Jensen-Doss et al., 2018).

Some clinicians are not convinced of the effectiveness of MFS and believe that the measures are not as accurate as general clinical judgement (Ross et al., 2016). Importantly, clinicians have raised concerns around the clinical usefulness and practicality of measures used in MFS. They report that some measures can take too long to administer, lack timely feedback, or it is challenging to access results (Ionita et al., 2016; Ross et al., 2016). Other concerns are lack of relevance of measurement items for clinicians and clients, and lack of sensitivity to change (Bickman, 2008; Happell, 2008; Kelley & Bickman, 2009). There is a strong association between clinicians' attitudes toward measure usefulness and MFS use (Chung & Buchanan, 2019). Jensen-Doss and colleagues (2018) explored clinicians' attitudes to standardised measures and found that clinicians who were more positive about a measure's clinical utility, treatment planning properties, and practicality were more frequently using routine outcome measures. The practicality of the measure was shown to be the strongest predictor of frequent use.

Service and organisation factors also play a vital role in the successful implementation of routine outcome measures and MFS. When a workplace mandates the use of progress monitoring, clinicians hold more positive views towards outcome measures and are more likely to administer them (Jensen-Doss et al., 2018). More specifically, organisational resources that incorporate technology to reduce administrative burden and increase the timeliness of feedback can help increase the use of MFS (Bickman et al., 2016). Another organisational support is the provision of appropriate training in MFS, which can increase clinicians' positive attitudes towards MFS and self-efficacy in use (Edbrooke-Childs et al., 2016). A trial of MFS in two youth clinics revealed that the clinic that provided more organisational supports engaged in MFS more often and had better treatment outcomes (Bickman et al.,

2016; Gleacher et al., 2016). While both clinics had the same training protocols and barriers to using new technology systems, organisational supports targeting championing of MFS and day-to-day clinical supervision were seen to be the critical factors for successful implementation of MFS.

Ross and colleagues (2016) studied the implementation of a secure web-based platform named Client-Reported Outcomes Monitoring Information Systems (CROMIS) rolled out across Operational Stress Injury clinics in Canada. The system included several measures that clinicians could choose as appropriate for clients. Clients could complete them electronically, and results were automatically scored with change graphs instantly available to clinicians. The rollout included training, technical support, and opportunities for comments. The study found that 85% of clinicians administering measures, 78% reviewing results, and 65% discussing results with clients. There were no differences in barriers between users and non-users when administering measures; however, non-users perceived "burden" and "organisational supports" as more prominent barriers when reviewing measure results. "Burden" was also a more significant barrier for non-users when discussing results with clients. These results suggest that there may be different barriers and facilitators to the different processes of MFS.

## MyLifeTracker in *headspace* Centres

MyLifeTracker (MLT) is a routine outcome measure designed for youth mental health settings (Kwan et al., 2018). It is brief, with only five items, making it suitable for session-by-session use, and was co-designed with young people and youth mental health clinicians to assess meaningful outcomes. It assesses the self-reported current quality of life in the domains of general wellbeing, day-to-day activities, relationships with friends, relationships with family, and coping. It is psychometrically sound across the 12–25 year age range, displaying appropriate validity, reliability, and sensitivity to change. It was developed for this age range to respond to the growing international movement toward youth mental health services, necessitating the creation of new measures suitable for both adolescents and young adults (Kwan & Rickwood, 2015; McGorry et al., 2013). It has a single factor structure, although the five items were also designed to be clinically useful individually (Kwan et al., 2018).

MLT is currently implemented via an electronic data system within more than 110 *headspace* youth mental health centres throughout Australia. *headspace* is the Australian Government's National Youth Mental Health Foundation, initiated in 2006 to provide early intervention in youth mental health for those aged 12–25 years (Rickwood et al., 2018). *headspace* centres offer holistic primary care services responding to mental health, alcohol and other drugs, physical/sexual health, and vocational concerns for young people. MLT is administered through a tablet device or computer before a young person attends each clinical session. The measure is sent to the young person via email or text message or completed while they are waiting in reception. New clients to *headspace* are provided with an online consent form when they first log in to the *headspace* data collection system. This advises why *headspace* collects the information and how it is used (Rickwood et al., 2018). The self-reported young person's results are instantly available to the clinician prior to the session in the form of a graph over time. The graph shows every session the young person has attended and can be viewed as a total MLT score or as individual items.

Young people have higher rates of deterioration during therapy and clinicians have lower rates of accurately predicting deterioration with young people, compared to adults in mental health treatment (Cannon et al., 2010; Warren et al., 2009). They are also more likely to show higher rates of treatment drop-out and missed appointments, and it has been suggested that this is due to their perceptions around the usefulness of professional help and stigma related to this (O'Brien et al., 2009). This higher level of disengagement is more common with young people who are males, Aboriginal or Torres Strait Islander, aged over 18 years, and living in rural areas. However, a high number of those who discontinue from treatment are shown to reengage in the future, and young people may need to engage multiple times to meet their mental health needs (Seidler et al., 2020). As such, the use of MLT in MFS targets a critical developmental period where this type of monitoring during treatment may be particularly useful (Donald et al., 2018; Langer & Jensen-Doss, 2018).

## The Current Study

The current study investigates the factors that affect the implementation of MFS in a naturalistic youth mental health setting by examining the usage of MLT in *headspace* centres. The first aim was to describe how much clinicians are using MLT in MFS. It was hypothesised that clinicians would be most likely to look at MLT before session, less likely to use MLT in treatment planning, and least likely to provide feedback of MLT scores to clients.

The second aim was to examine the nature of potential predictors of MLT use in MFS, specifically: attitudes to MFS in general; attitudes to MLT specifically; and perceptions of organisational support for MLT. It was hypothesised that clinicians would hold neutral to positive attitudes and perceptions towards these factors based on previous research exploring the use of MFS (Jensen-Doss et al., 2018).

The third aim was to identify the strongest predictors of MLT use in MFS, specifically: clinician characteristics; attitudes to MFS in general; attitudes to MLT specifically; and perceptions of organisational support for MLT. It was hypothesised that fewer years of clinical experience, positive attitudes towards MLT practicality, positive perceptions of organisation championing for MLT, and positive perceptions of organisational clinical support for MLT would be the strongest predictors of MLT use in MFS.

### Method

#### Participants

Participants comprised 210 clinicians from 88 *headspace* centres across Australia. Participant demographic and professional characteristics are presented in Table I. Participants were mostly female, psychologists, had a bachelor's or master's degree, used cognitive behavioural therapies, and were employed as salaried staff.

#### Procedure

Participants were recruited through an email invitation sent to 1176 clinicians in *headspace* centres across Australia. Those interested in participating were directed to a link connected to the online Qualtrics platform that provided participant information and then the survey questionnaire. The response rate was 17.9%. Data were collected between 10th April 2019 and 31st July 2019. Ethics approval was obtained from the University of Canberra Human Research Ethics Committee (Project no. 0468).

#### Measures

The Qualtrics survey collected demographic information as reported in Table I and the following measures.

**MyLifeTracker measurement feedback system use (MLT use in MFS).** To assess clinician use of MLT in MFS, three items were adapted from

Table I. Participant demographic characteristics.

| Demographic characteristics | |
| --- | --- |
| Age (years), *M* (*SD*; range) | 37.5 (10.50; 23–66) |
| Gender [*n* (%)] | |
| Male | 41 (19.6%) |
| Female | 166 (79.4%) |
| Non-binary | 2 (1.0%) |
| Highest education level [*n* (%)] | |
| Diploma | 8 (3.8%) |
| Bachelor's degree | 94 (45.2%) |
| Master's degree | 93 (44.7%) |
| Doctoral degree | 13 (6.3%) |
| Professional discipline [*n* (%)] | |
| Clinical psychologist | 22 (10.5%) |
| Psychologist | 54 (25.7%) |
| Provisional psychologist | 22 (10.5%) |
| Social worker | 37 (17.6%) |
| Counsellor | 17 (8.1%) |
| General Practitioner | 12 (5.7%) |
| Occupational therapist | 10 (4.8%) |
| Nurse | 6 (2.9%) |
| Psychiatrist | 2 (1.0%) |
| Youth worker | 9 (4.3%) |
| Alcohol and other drugs worker | 2 (1.0%) |
| Mental health worker | 3 (1.4%) |
| Other | 14 (6.7%) |
| Years clinical experience, *M* (*SD*; range) | 8.8 (7.74; 0-35) |
| Primary therapeutic orientation [*n* (%)] | |
| Cognitive behavioural therapy | 85 (40.9%) |
| Psychodynamic/psychoanalytic | 5 (2.4%) |
| Family systems | 9 (4.3%) |
| Humanistic/client-centred | 40 (19.2%) |
| Eclectic | 46 (22.1%) |
| Other | 23 (11.1%) |
| Funding source [*n* (%)] | |
| Private practitioner | 56 (26.7%) |
| On-staff grant funded | 111 (52.9%) |
| In-kind partner | 19 (9.0%) |
| Other | 24 (11.4%) |

previous research to gauge the use of MLT in each of the different processes within MFS (Lyon et al., 2019; Ross et al., 2016). Participants were asked to indicate the percentage of sessions in which they use MLT in the following ways:

- look at MyLifeTracker before session?
- use MyLifeTracker to inform treatment planning in any way (i.e., alter plan, continue plan as it supports it, add more supports)?
- provide feedback of MyLifeTracker scores to clients in any way (i.e., discuss results, show graph results, ask about areas of change/deterioration or no change)?

**Monitoring and feedback attitudes scale (MFA).** To assess clinician attitudes towards MFS, including the processes of administration of routine measures, use of measures in treatment planning, and feedback of treatment progress to clients, the

14-item Monitoring and Feedback Attitudes Scale (MFA) was used (Jensen-Doss et al., 2018). In the MFA instructions, definitions of routine progress monitoring and providing feedback were included. Participants were asked to indicate how much they agreed or disagreed with each statement on a scale of 1 (Strongly Disagree) to 5 (Strongly Agree). The MFA consists of two subscales: MFA Benefit (10 items) and MFA Harm (4 items). Total subscale scores were calculated by averaging across the items with higher subscale scores indicating higher levels of endorsement for monitoring and feedback benefits and harm. Jensen-Doss et al. (2018) found this measure to have good internal consistency (MFA Benefit $\alpha = 0.87$, MFA Harm $\alpha = 0.87$). The current study also found good internal consistency (MFA Benefit $\alpha = 0.93$, MFA Harm $\alpha = 0.82$).

**Attitudes toward MyLifeTracker-monitoring and feedback (AM-MF).** To assess clinician attitudes toward using MLT for clinical decision making and feedback, 18 items were adapted from the Attitudes Toward Standardized Assessment Scales-Monitoring and Feedback (ASA-MF; Jensen-Doss et al., 2018). The phrase "standardised progress measures" was replaced with "MyLifeTracker" to focus on views of MLT specifically. The wording "administering" measures was replaced by "accessing and reviewing" measures for relevant items, as the administration of MLT is completed by reception staff in this study. Participants were provided with the definition of routine progress monitoring, directed to answer the items based specifically on MLT, and provided visual examples of the MLT measure and graphs. They indicated how much they agreed or disagreed with each statement on a scale of 1 (Strongly Disagree) to 5 (Strongly Agree). Total subscale scores were calculated by averaging across the items, with higher subscale scores indicating more positive attitudes towards MLT. The AM-MF consisted of three subscales, all with acceptable internal consistency: Clinical Utility (8 items, $\alpha = 0.79$), Treatment Planning (5 items, $\alpha = 0.79$), and Practicality (5 items, $\alpha = 0.77$). Jensen-Doss et al. (2018) found the original ASA-MF to have good internal consistency (Clinical Utility $\alpha = 0.85$, Treatment Planning $\alpha = 0.85$, and Practicality $\alpha = 0.81$).

**Organisational factors for MyLifeTracker use scale (OFM).** To assess clinician perceptions of organisational factors in the use of MLT, 21 items were adapted from previous research exploring organisational factors for routine outcome measure use (Gleacher et al., 2016; Jensen-Doss et al., 2018; Ross et al., 2016). Items covered organisation

resources such as, "I have adequate technological resources to use MyLifeTracker for routine progress monitoring and providing feedback (e.g., computer or tablet devices or printers)"; championing of MLT, "the organisation encourages me to use MyLifeTracker with treatment planning and providing feedback within sessions"; clinical support, "my supervisor/manager provides clinical support of MyLifeTracker with treatment planning and providing feedback within sessions"; and training, "I have adequate training with using MyLifeTracker in treatment planning." Definitions of routine progress monitoring and providing feedback were again included, and participants were again directed to answer the items based specifically on MLT. They indicated how much they agreed or disagreed with each statement on a scale of 1 (Strongly Disagree) to 5 (Strongly Agree). Total subscale scores were calculated by averaging across the items with higher subscales scores indicating more positive perceptions of organisational factors in the use of MLT. The OFM consisted of four subscales, all with good internal consistency: Resources (6 items, $\alpha = 0.86$), Championing (7 items, $\alpha = 0.85$), Clinical Support (3 items, $\alpha = 0.83$), and Training (5 items, $\alpha = 0.90$).

### Data Analyses

Levels of use of each of the three MFS processes were the dependent variables. These were the percentage of client sessions in which participants used MLT in the following ways: looked at MLT before session, used MLT in treatment planning, and provided feedback of MLT scores to clients. A one-way repeated measures analysis of variance (ANOVA) was used to compare the percentage of client sessions participants used MLT across the three MFS processes. The proportion of participants who marked 0% use to each MFS process was also calculated. A Cochran's $Q$ test was used to test for differences between related proportions of participants who marked 0% use across the three MFS processes.

For analysis purposes, the following clinician demographics were included as predictor variables and were transformed into binary variables: highest education level —Diploma/Bachelor's (0), Masters/Doctoral (1); primary therapeutic orientation—All Else (0), Cognitive Behavioural Therapy (1); funding source—Private Practitioner/In-Kind Partner/Other (0), On-Staff Grant Funded (1). Years of clinical experience was also included in analyses. The subscales of MFA, AM-MF, and OFM were the remaining predictor variables.

To examine whether the potential predictors of MLT use in MFS were positively or negatively valenced, a one-sample $t$-test was used to compare

the subscale scores of MFA, AM-MF, and OFM against a neutral rating of 3. Cohen's *d* effect sizes were computed to identify the magnitude of attitude and perception strength. Correlational analysis examined relationships among predictors and dependent variables. Multiple linear regression was used to assess the relative contributions of the predictor variables to explaining the variance of the three dependent variables. Effect sizes were interpreted according to Cohen's conventions (Cohen, 1988). SPSS V25 was used for all quantitative analyses.

## Results

### Clinician MLT Use in MFS

Overall, participants looked at MLT before just over half (*M* = 52.48%, *Median* = 55.50%, *SD* = 37.87) of their sessions, used MLT in treatment planning for slightly more than one-third (*M* = 36.23%, *Median* = 32.50%, *SD* = 29.60) of sessions, and provided feedback of MLT scores to clients in a quarter (*M* = 24.67%, *Median* = 16.00%, *SD* = 25.86) of sessions. A repeated-measures ANOVA with a Greenhouse-Geisser correction determined that the average percentage of client sessions participants used MLT across the three MFS processes differed significantly with a large effect size, $F$ (1.74, 280.01) = 75.62, $p < .001$, $\eta_p^2 = .32$. Pairwise comparisons using the Bonferroni correction revealed that each MFS process differed significantly from the others ($p's < .001$).

The proportion of participants that reported that they did not use MLT in MFS, specifically marking 0% of MLT use in sessions were 13.3% (before session), 15.2% (treatment planning), and 24.1% (client feedback). Cochran's $Q$ (with $\alpha = .05$), which tests for differences in related proportions, was statistically significant, $Q$ (2, $N = 162$) = 18.24, $p < .001$. To locate the source of this significance, a series of pairwise comparisons using the McNemar test with the Bonferroni correction ($\alpha = .017$) were undertaken. The proportion of participants that did not use client feedback was significantly higher than those who did not look at MLT before session ($p < .001$) and did not use it in treatment planning ($p = .003$), respectively. The proportion of participants that did not look at MLT before session and did not use it in treatment planning were not significantly different ($p = .36$).

### Clinician Attitudes and Perceptions for MFS and MLT

Table II contains the subscale scores for MFA, AM-MF, and OFM, and their effect sizes when compared to a neutral rating of 3. The MFA Benefit subscale

Table II. Subscale scores for MFA, AM-MF, and OFM, and their effect sizes when compared to a neutral rating of 3.

| Subscale | *M* (SD) | $d^{\text{£}}$ |
|---|---|---|
| MFA Benefit | 4.17 (0.49)* | 2.39 |
| MFA Harm | 2.48 (0.66)* | −0.79 |
| AM-MF Clinical Utility | 3.20 (0.53)* | 0.38 |
| AM-MF Treatment Planning | 3.31 (0.62)* | 0.50 |
| AM-MF Practicality | 3.57 (0.63)* | 0.90 |
| OFM Resources | 3.75 (0.71)* | 1.06 |
| OFM Championing | 2.98 (0.67) | −0.03 |
| OFM Clinical Support | 2.40 (0.86)* | −0.70 |
| OFM Training | 2.90 (0.94) | −.11 |

*Note.* *$p < .001$, when compared to a neutral rating of 3; all scales ranged from 1 to 5.

was on average positive and showed a large effect size when compared to a neutral rating, while participants disagreed with the MFA Harm subscale with a moderate to large effect size. Participants were generally positive about MLT with a small to medium effect size for AM-MF Clinical Utility, a medium effect size for AM-MF Treatment Planning, and a large effect for AM-MF Practicality. Participants on average were positive about OFM Resources with a large effect size, while they were negative about OFM Clinical Support with a moderate effect size. Differences were not significant for OFM Championing and OFM Training.

### Intercorrelations Among Predictors and MLT Use in MFS

Table III presents the intercorrelations between predictor and dependent variables. Fewer years of clinical experience was related to higher levels of looking at MLT before session. Education level and funding source were not related to any MLT use in MFS. CBT-oriented clinicians were slightly more likely to look at MLT before session and provide feedback on MLT scores to clients. The MFA benefit subscale was weakly associated with the use of MLT in treatment planning and providing feedback on MLT scores to clients. Participants who disagreed with items on the MFA harm subscale were weakly more likely to use MLT in treatment planning. All three AM-MF subscales and all four OFM subscales were positively correlated to all three processes of MLT use in MFS, with AM-MF Practicality and OFM Championing showing the strongest relationships. All three dependent variable scales for MLT use in MFS were moderate to strongly intercorrelated.

### Predictors of MLT use in MFS

Table IV presents the multiple regression models for predicting use of MLT in MFS: specifically looking

Table III. Intercorrelations among predictor and dependent variables.

| Variable | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 Years Clin Exp | — | .15* | -.21** | -.20** | .00 | -.21** | -.03 | .01 | -.08 | -.17* | -.04 | -.04 | -.03 | -.26** | -.11 | -.04 |
| 2 Ed Level | | — | -.15* | .01 | -.06 | -.04 | .03 | -.08 | -.02 | .01 | -.05 | -.04 | .03 | -.06 | -.11 | -.05 |
| 3 Funding Source | | | — | .01 | .06 | .05 | -.07 | .04 | .04 | .09 | .05 | .06 | .01 | .09 | .08 | -.01 |
| 4 Therapy Orient | | | | — | .09 | -.09 | .04 | -.08 | .10 | .15* | .04 | -.02 | .00 | .18* | .10 | .18* |
| 5 MFA Benefit | | | | | — | -.24** | .24** | .37*** | .31*** | .14 | .36*** | .19* | .15* | .08 | .21** | .20* |
| 6 MFA Harm | | | | | | — | -.31*** | -.17* | -.30*** | -.08 | -.12 | -.02 | -.12 | -.02 | -.17* | -.12 |
| 7 AM-MF CU | | | | | | | — | .59*** | .55*** | .14 | .33*** | .13 | .09 | .16* | .38*** | .16* |
| 8 AM-MF TP | | | | | | | | — | .48*** | .12 | .47*** | .19* | .17* | .26** | .49*** | .24** |
| 9 AM-MF Prac | | | | | | | | | — | .41*** | .39*** | .13 | .27*** | .51*** | .50*** | .34*** |
| 10 OFM Res | | | | | | | | | | — | .32*** | .20* | .28*** | .36*** | .25** | .17* |
| 11 OFM Champ | | | | | | | | | | | — | .56*** | .54*** | .39*** | .55*** | .41*** |
| 12 OFM Clin Supp | | | | | | | | | | | | — | .63*** | .22** | .32*** | .43*** |
| 13 OFM Training | | | | | | | | | | | | | — | .29*** | .37*** | .38*** |
| 14 Before Session | | | | | | | | | | | | | | — | .65*** | .47*** |
| 15 Treat Planning | | | | | | | | | | | | | | | — | .62*** |
| 16 Client Feedback | | | | | | | | | | | | | | | | — |

*Note.* $^*p < .05$, $^{**}p < .01$, $^{***}p < .001$.

at MLT before session, using MLT in treatment planning, and providing feedback of MLT scores to clients.

**Predictors of looking at MLT before session.** The model explained 41.6% of the variance in clinicians looking at MLT before session, adjusted $R^2 = .36$, $F (13, 147) = 8.05$, $p < .001$, a large effect ($f^2 = 0.71$). Significant predictors were years of clinical experience, AM-MF practicality, and OFM championing, uniquely explaining 2.3%, 12.2%, and 2.2% of the variance, respectively. The MFA benefit and AM-MF clinical utility subscales were also statistically significant, surprisingly in the opposite predicted direction (possibly a suppressor effect), uniquely explaining 3.2% and 2.3%, respectively.

**Predictors for using MLT to inform treatment planning.** The model explained 45.8% of the variance in clinicians using MLT to inform treatment planning, adjusted $R^2 = .41$, $F (13, 145) = 9.43$, $p < .001$, again a large effect ($f^2 = 0.85$). Significant predictors were AM-MF treatment planning, AM-MF practicality, and OFM championing, which

Table IV. Standardised multiple regression coefficients (β) for predicting use of MLT in MFS: before session ($n = 161$), treatment planning ($n = 159$), and client feedback ($n = 157$).

| Variable | Before Session β | Treatment Planning β | Client Feedback β |
|---|---|---|---|
| Years of Clinical Experience | -.170* | -.044 | .028 |
| Highest Education Level | -.010 | -.060 | -.017 |
| Funding Source | -.017 | .018 | -.053 |
| Therapeutic Orientation | .099 | .074 | .178* |
| MFA Benefit | -.208** | -.137 | .015 |
| MFA Harm | .024 | -.070 | -.024 |
| AM-MF Clinical Utility | -.216* | .009 | -.126 |
| AM-MF Treatment Planning | .124 | .276** | .097 |
| AM-MF Practicality | .499*** | .214* | .262** |
| OFM Resources | .070 | -.016 | -.085 |
| OFM Championing | .221* | .317** | .109 |
| OFM Clinical Support | .049 | .035 | .321** |
| OFM Training | -.009 | .057 | .062 |

*Note.* MFA: monitoring and feedback attitudes scale, AM-MF: attitudes toward MyLifeTracker-monitoring and feedback; OFM: organisational factors for MyLifeTracker use scale.
$^*p < .05$, $^{**}p < .01$, $^{***}p < .001$.

uniquely explained 3.8%, 2.2%, 4.6% of the variance, respectively.

**Predictors for providing feedback of MLT scores to clients.** The model explained 32.6% of the variance in clinicians providing feedback of MLT scores to clients, adjusted $R^2 = .26$, $F$ (13, 143) = 5.31, $p < .001$, a large effect ($f^2 = 0.48$). Significant predictors were therapeutic orientation, AM-MF practicality, and OFM clinical support, uniquely explaining 2.8%, 3.3%, 5.6% of the variance, respectively.

## Discussion

The current study investigated the factors affecting the implementation of a routine outcome measure in naturalistic youth mental health settings, focusing on the use of MLT within MFS in *headspace* services across Australia. The first aim was to describe how much clinicians were using the measure and, as expected, clinicians were most likely to look at MLT before session, less likely use MLT in treatment planning, and least likely to provide feedback of MLT scores to clients. In most research, there is a discrepancy between the rates of use across MFS processes also seen in the current study (Ross et al., 2016). Providing quick and accessible outcome measurement data to clinicians is very important; however, clinicians have not always been shown to use the information when provided (De Jong et al., 2012). Several reasons have been identified for this disparity, including clinicians' negative attitudes, anxiousness and discomfort, and lack of knowledge towards MFS (Ionita et al., 2016). The implementation of all MFS processes used together are most strongly associated with improved outcomes (Krägeloh et al., 2015). This suggests different active ingredients across the MFS processes and that an integrated approach is required for the full clinical benefits.

In the current study, between 13%−24% of participants marked 0% use of MLT across the three MFS processes. This is considerably lower than the proportion of clinicians who do not use outcome measurement identified in other mental health settings, which have shown to up to 61%−88% (Ionita & Fitzpatrick, 2014; Jensen-Doss et al., 2018). A recent survey completed by Australian psychologists found that almost a third (31%) did not use progress monitoring measures in practice (Chung & Buchanan, 2019). An audit of Child and Adolescent Mental Health Services (CAMHS) in the United Kingdom reported only 16% of clinician case notes included an outcome measure at more than one-time point, even though these services have clear

policies and support around routine outcome measurement (Batty et al., 2013). The use of MLT in MFS in *headspace* centres was, therefore, shown to be relatively high.

The second hypothesis, that clinicians would hold neutral or positive attitudes and perceptions towards MLT use in MFS, was supported with participants agreeing that there were benefits to MFS use and disagreeing that there were harmful effects, with large effect sizes consistent with previous research (Jensen-Doss et al., 2018). Participants identified MLT as mostly practical, moderately useful with treatment planning, and were somewhat positive about MLT's clinical utility. These ratings are comparable or rated as more positive than clinicians views towards standardised progress measures generally (Jensen-Doss et al., 2018). This may be due to *headspace's* design of MLT, which is easy to use, brief, sensitive to change, used session-by-session, and is presented instantly to the clinician before session in the form over a graph over time (Kwan et al., 2018). Notably, it was originally co-designed with the input of clinicians (and clients) and provides information that is meaningful to them. Development of measures that provide efficient information and are integrated into an accessible electronic system reduces the practical concerns that afflict other measures and their respective systems (Jensen-Doss & Hawley, 2010).

Participants were positive about the practical resources provided for MLT use and neutral about the organisation's championing and training of MLT use. The only negative perceptions were about the level of clinical support provided for MLT use. The implementation of MLT as a part of the electronic data collection system used across *headspace* services is highly progressive. However, it was initially implemented for monitoring and evaluation purposes, rather than for clinical utility, which has only been more recently supported (Kwan et al., 2018; Kwan & Rickwood, 2020; Rickwood et al., 2018; Rickwood et al., 2015). Therefore, these results are unsurprising but reinforce the need for the organisation to focus on these neutral or negative perceptions of championing, training, and clinical support to support MLT use.

The third aim was to examine the strongest predictors of MLT use in MFS. Consistent with previous research, fewer years of clinical experience was shown to be a unique predictor of looking at MLT before session, but not for treatment planning or client feedback processes. It may be that clinicians with fewer years of experience have more recently graduated from programmes that are more likely to have incorporated routine progress monitoring in their clinical training (Ionita & Fitzpatrick, 2014).

Alternatively, they may be less confident in their clinical ability and may value the use of external and quantified feedback on clinical progress. CBT clinicians were more likely to provide feedback of MLT scores to clients when controlling for other factors, and it has been proposed that the structure of CBT is congruent with this type of monitoring and feedback (Jensen-Doss et al., 2018). While differences in years of experience and therapeutic orientations are not definitive predictors of treatment outcomes (Goldberg et al., 2016; Luborsky et al., 2002), clinicians with fewer years of experience are shown to have more anxiety, need more direction, and are still working to embed specific learnings. More experienced clinicians are more autonomous and move towards consistency between their worldview, self-concept, values, and therapeutic framework, which may not always match the standardised and regimented use of MFS (Rønnestad et al., 2019).

MLT practicality was the only unique predictor for all three MFS processes and accounted for a considerable 12.2% of the variance in clinicians looking at MLT before session. It is advised that creating or modifying outcome measures to make them more practical, or providing increased education around their practical benefits, helps increase their use in MFS (Jensen-Doss et al., 2018; Jensen-Doss & Hawley, 2010). This is particularly relevant for MLT as the results show that clinicians were very positive about MLT's practical qualities. Unsurprisingly, positive attitudes toward MLT treatment planning properties were related to clinicians using MLT in treatment planning more often.

As hypothesised, organisational championing was a unique predictor of clinicians looking at MLT before session and using MLT in treatment planning, while organisational clinical support was a unique predictor of clinicians providing feedback of MLT scores to clients. Championing creates a positive culture which prioritises and values innovation of MFS use, which research suggests are one of the essential factors of MFS use (Gleacher et al., 2016). However, when the process of providing feedback to clients is examined separately, clinical support is critical, and there is a need for clinical guidance and expertise, not just championing. This is consistent with previous research that has identified training, clinical support, and a useful electronic system as the most important factors for the clinical processes of MFS use (Lyon et al., 2019).

## Practical Implications

The practical implications of the current study inform supervisors and organisations of the areas of importance in supporting clinicians to use each MFS process. Workload resources and IT supports can help initiate the use of MFS (Brooks Holliday et al., 2020). These supports may reduce the barriers for clinicians with more years of clinical experience to look at measures before session. It may be helpful to target clinician attitudes towards a measure's treatment planning properties to facilitate more use of measures in treatment planning. Supervisors should focus on clinical supports, such as individual clinical supervision and clinical team discussions, to increase clinicians providing feedback on measurement scores to clients. The use of MFS is an evidenced-based practice that is shown to be transtheoretical and transdiagnostic in nature (Boswell, 2019), and it may be helpful to involve non-CBT clinicians in discussions about how MFS can fit into their therapeutic framework.

At a service level, a focus on a measure's practicality can help increase MFS use across processes, but particularly for clinicians looking at MLT before session. Organisational championing was identified as necessary for initiating MFS use in treatment planning, and targeted efforts should be focussed in this area. Overall, these strategies target increasing the use of MFS to levels that may be more effective in producing clinical outcomes and formal feedback which has been shown to enhance the process of deliberate practice (Fortney et al., 2017; Macdonald & Mellor-Clark, 2015). Deliberate practice is the process of systematic effort to improve clinical performance, which has shown to produce more effective clinicians (Chow et al., 2015).

Importantly, benchmarks have recently been created for MLT in the form of clinically significant change indexes by age group and gender and expected change trajectories established by baseline MLT scores (Kwan & Rickwood, 2020). These benchmarks are yet to be incorporated within the *headspace* electronic data collection system, where they will provide additional clinical information for clinicians and clients. The creation of benchmarks, combined with health technology, allows clinicians to quickly identify potential blind spots and target areas during treatment (Chorpita et al., 2016). Given that clinicians have been shown to have limited knowledge around the use of routine outcome measures in predicting client deterioration, implementation of such benchmarks are vital (Bystedt et al., 2014). The addition of expected change trajectories and risk signals have been shown to enhance the treatment effects already seen in MFS (Delgadillo et al., 2018).

There is a large discrepancy between clinicians looking at MLT before session and using it in the other MFS processes. It is therefore recommended

that formalised training, clinical supports, and treatment guidelines are created. This should include the evidence for the use of brief measures in MFS (Østergård et al., 2020), a guide on how clinical benchmarks can help inform treatment planning (Kwan & Rickwood, 2020), and a structured framework of how to discuss feedback with clients (Law & Wolpert, 2014). MLT consists of five items targeting areas of importance to young people, and these items can be individually tracked (Kwan et al., 2018; Moses & Claypool, 2018). This has shown to be a collaborative method of highlighting strengths and targeting problem areas for clients (Cross et al., 2015). Finally, there can be concerns from clinicians about MFS used as a performance management tool, and specific procedures should be provided for supervisors and organisations on how to appropriately utilise MFS to reduce these concerns (Law & Wolpert, 2014).

## Limitations

The results of the current study need to be interpreted in light of its limitations. A fundamental limitation was the self-report nature of MLT use in MFS. Most studies only investigate the frequency of administration of routine measures, and only a few have explored the breakdown of MFS processes; specifically looking at measures before session, use of measures in treatment planning, and providing feedback of measure scores to clients (Ross et al., 2016). While this is an innovative way of exploring MFS use, the use of new technologies to track implementation may help increase the ability to measure MFS use objectively. Specifically, having IT systems that can log when clinicians access outcome measurement data could identify if clinicians access the data before session, during session to provide client feedback, and after session for treatment planning. The current research survey did not enquire about the clinicians' caseload volume, or knowledge and experience with MFS and MLT, which have been shown to influence attitudes towards MFS and the amount of MFS use (Ionita & Fitzpatrick, 2014). Furthermore, *headspace* is an early intervention youth mental health service designed with a range of innovative service provisions for national use, and results of the current study may not be generalisable to other mental health care settings.

Another limitation was the possibility of a sample bias through voluntary survey recruitment. The survey was sent to *headspace* clinicians across Australia, and 17% who responded may have had more interest and experience with MLT and MFS. Such low response rates are typically seen with online surveys, however, and this level of response was to be expected (Manfreda et al., 2008; Morton et al., 2012). The results may not be representative of *headspace* clinicians generally, although the professional breakdown of this sample is broadly consistent with previous reports (Allott et al., 2019; Rickwood et al., 2015). Similar to the current study, a survey of *headspace* clinicians by Allott et al. (2019) consisted of predominately psychologists (> 40%), social workers (approximately 20%), and a range of nurses, counsellors, youth workers, occupational therapists and general practitioners (all under 10%, respectively). Additionally, on average they were also aged in their late thirties, had approximately nine years of clinical experience, were mostly postgraduate qualified, were mostly salaried staff, and just over a quarter were private practitioners.

## Conclusion

The current paper provides an overview of clinician views on the utility of MLT and a summary of clinicians' perceptions towards *headspace* supports in the use of MFS. This contributes to growing research supporting the need to implement routine measures within MFS for youth mental health care (Kodet et al., 2019; Mayworm et al., 2020). This study furthers the knowledge around the implementation of MFS, practically, identifying the factors for clinicians using the different MFS processes. MFS presents as a promising evidence-based platform to help clinicians target common factors of clinical change and enhance their deliberate practice (Boswell et al., 2015). As more efforts are made to understand the factors affecting the implementation of MFS, the more feasible it becomes for clinicians and organisations to utilise these systems.

## Data and/or Code availability

The data that support the findings of this study are available on request from the corresponding author. The data are not publicly available due to restrictions that could compromise research participant privacy.

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