Article

Teacher Mental Health Literacy and Child Development in Australian Primary Schools: A Program Evaluation

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Abstract: Primary school teachers play a significant role in the support of children with mental health and developmental concerns, which can be comorbid or share similar symptomology. The literature suggests there is a deficiency in teacher mental health literacy (MHL), indicating that teachers often lack the knowledge and confidence to support childhood mental health. This study evaluated the success of the Mental Health Literacy for Educators Training Program for a subset of Queensland (QLD) primary school teachers, with a focus on the developmental areas of Attention Deficit Hyperactivity Disorder, Speech and Language Disorders, and Sensory Processing Disorders. The aim was to evaluate whether knowledge and confidence improved on training completion and to evaluate the satisfaction of the training. This research used a longitudinal design (pre- and post-training) with a sample of 81 QLD primary school teaching staff over a three-year period (2013–2015). The results showed that knowledge and confidence improved on training completion and were strongly correlated. The satisfaction with training was high and positively correlated with knowledge acquisition and confidence attainment. In respect of complex effects, a moderated mediation model showed that confidence mediated the relationship between satisfaction and knowledge, and years of teaching experience as a moderator had no effect directly on confidence or in producing a conditional indirect effect on knowledge. This study considers limitations such as ceiling effects, participant and self-selection biases, and sample representation, which limits the interpretation of the findings. At last, it also recommends additional longitudinal follow-up periods to assess knowledge maintenance, teacher helping behaviours, and benefits to children as key directions for future research.

Keywords: teacher; professional development; mental health literacy; child development

1. Introduction

Mental health concerns that arise in childhood can significantly impact the potential for a productive and fulfilling life [1] with global estimates that half of all adult mental illness emerges before the age of 14 [2]. The Australian Young Minds Matter (AYMM) survey in 2013–2014 estimated around 14% of children aged 4–11 years experienced a mental disorder in the previous 12 months [3]. Evidence suggests that mental illness in adulthood is strongly predicted by mental health difficulties experienced in childhood [4], with one study reporting that almost 50% of children with mental illness will continue to experience struggles in adulthood [5]. These alarming statistics highlight the importance of investing in childhood mental health. This may include the early identification of mental health difficulties, the implementation of intervention strategies, and nurturing positive wellbeing to prevent lifelong disability [6].

The implications of poor childhood mental health can be observed across the lifespan. Children with mental health problems experience poor academic outcomes, such as a reduced performance in Australia's National Assessment Program Literacy and Numeracy (NAPLAN) tests [1], higher rates of absenteeism [7], and social, emotional, and behavioural

difficulties disrupting classroom learning [3]. Untreated mental health problems in childhood can lead to exasperated symptom severity during adolescence, with the AYMM survey finding 11% of adolescents reported self-harm in their lifetime, and around 8% seriously considered suicide in the previous 12 month [3]. By adulthood, mental illness creates a significant burden on society, including poor family and social relationships, high rates of poverty, homelessness, and unemployment [8].

The National Children's Mental Health and Wellbeing Strategy (NCMHWS) identified that education settings provide an ideal platform to support the mental health and wellbeing of children from birth to 12 years [9]. Strategy recommendations involve building the capacity of teaching staff to (a) be aware of struggling children, (b) identify children failing to meet emotional, social, and developmental milestones, and (c) understand when it is appropriate to refer children for professional support [9]. However, whilst evidence suggests teachers are motivated to support student mental health, many report a lack of confidence and knowledge to identify and address mental health problems in the classroom [10,11]. One solution to improve teacher knowledge and confidence may be professional development training, facilitating enriched teacher helping behaviours in the classroom [12–14].

The Mental Health Literacy for Educators Training Program (MHLETP) was a pilot program that targeted Queensland (QLD) primary school teachers over a three-year period (2013–2015). The aim was to improve teacher mental health literacy with a focus on the developmental concerns of Attention Deficit Hyperactivity Disorder (ADHD), Speech and Language Disorders (SLD), and Sensory Processing Disorders (SPD), and their impacts on childhood mental health. This study is significant as it contributes to the growing body of evidence supporting the need for mental health literacy programs for teachers and the importance of the education system in improving childhood mental health.

1.1. Mental Health Disorders and Developmental Disorders

Mental health disorders are clinically diagnosed disorders that significantly impair social, emotional, and cognitive functioning, leading to poor mental health [15]. Mental health can also be impacted by undiagnosed mental health disorders or developmental disorders. Developmental disorders arise from the delay or impairment of the physical, social, cognitive, and adaptive functioning associated with the biological maturation of the central nervous system [16]. The aetiology of developmental disorders is the interaction of genetic and environmental factors [17,18]. Moreover, the *Diagnostic Manual of Mental Disorders, fifth edition* (DSM-5) [19], classifies developmental disorders into six categories, including intellectual disabilities, communication disorders, autism spectrum disorders, ADHD, specific learning disorders, and motor disorders. Developmental disorders are related to poor mental health as both lead to a reduced quality of life, academic difficulties, and problems with emotions, socialisation, and behaviour [20]. In the literature, mental health disorders, developmental disorders, and mental health difficulties, illness, concerns, and problems are often referred to interchangeably. For example, ADHD is a developmental disorder and is considered the most prevalent childhood mental health concern in Australia [3].

Developmental and mental health disorders may be comorbid, with the AYMM survey identifying that in the previous 12 months almost one-third of children and adolescents aged 4–17 years struggled with two or more disorders around the same time [3]. The most prevalent comorbid conditions were ADHD, anxiety, depression, and conduct disorder [3]. Furthermore, it may be unclear whether childhood symptoms relate to a developmental concern, which may be transient and resolve, or whether these represent the onset of a mental health disorder [21]. For example, some anxiety may be developmentally appropriate in young children (i.e., separation anxiety) or may indicate an anxiety disorder [22,23]. This confusion may also relate to the symptom of irritability, with recent studies establishing a connection to ADHD in a developmental context; however, it could also signal the onset of depression or mood disturbance [23,24].

Approximately 8% of primary-aged children are diagnosed with ADHD [3]. More than three-quarters of children with diagnosed ADHD will continue to experience symptoms in adulthood [25,26] which may lead to financial difficulties, self-harm, suicide, criminal activity, drug and alcohol abuse, and a reduced overall life expectancy [26–28]. Furthermore, inadequate treatment may increase the risk of comorbid mental health concerns, most commonly depression and anxiety [28]. Early intervention to mitigate these risks may include psychological support (e.g., emotion regulation), medication, and classroom strategies to help children achieve [27].

Research on school starters reported that many children suffer expressive (21%, i.e., talking) and receptive (16%, i.e., listening) language difficulties [29]. In primary school, SLDs result in difficulties with emotion regulation, behaviour, socialisation, and communication [30,31]. It is anticipated that 2 children in each class of 30 will experience a language disorder, which may increase the risk of comorbid mental health difficulties [32]. For example, sustained social isolation associated with SLDs may lead to anxiety and mood disorders [33]. Early intervention and support may mitigate these serious risks.

Sensory processing disorders are common in primary school, impacting 5–15% of children without disabilities [34,35]. The prevalence is significantly higher in those with a disability, affecting up to 60% of children with ADHD [34,36]. In primary school, SPDs cause challenges, including activity refusal, difficulty maintaining friendships, impaired motor skills, lashing out, tantrums, and difficulty concentrating on tasks, disrupting academic performance [37,38]. These difficulties can severely impact self-esteem which may lead to comorbid mental health concerns, such as depression, anxiety, irritability, and hyperactivity [39,40]. Early intervention may improve quality of life and can include managing visual sensitivities, establishing structured routines, and minimising cluttered displays [38].

1.2. Mental Health Literacy

Teachers can be supported in their role by improving their mental health literacy (MHL). MHL signifies a state of competence in the identification and interaction of individuals with mental health difficulties, concerns, and problems [41]. Enhancing the MHL of primary teachers may facilitate better identification, support, and referral of children experiencing mental health difficulties. However, hitherto, MHL has been a neglected area of professional development with the awareness of major physical health conditions (e.g., heart disease and cancer) far exceeding knowledge about mental disorders [42].

Developing teacher MHL is important given that health and education play a vital role in child development, where children are unable to effectively learn if their mental health is considered poor 19 [8,43]. Education settings provide the perfect environment where children can be observed in multiple contexts and over long periods, to recognise and intervene in emerging mental health issues, build resilience, and support caregivers [9,44]. The AYMM survey found that school staff were responsible for alerting parents of their child's emotional and behavioural concerns in 40% of cases [3]. On school advice, children and adolescents used psychiatrists (17%), psychologists (17%), or general practitioners (16%) in the previous 12 months for mental health concerns, with 20% of students receiving informal support for behavioural and emotional problems from staff. Investing in teacher MHL will provide children with access to timely interventions and support.

Teachers acknowledge that supporting the mental health of students is a core function of their role; however, they consistently report a lack of knowledge and confidence [45,46]. For example, an ADHD Australia [47] survey revealed that 87% of teachers felt their education was inadequate to recognise symptoms of ADHD, with 93% reporting they would benefit from additional professional development. Interestingly, schools are identified as ideal platforms to address childhood mental health; teachers acknowledge their role in achieving this, but there is a significant lack of MHL to enable this to effectively occur [11]. This highlights a noteworthy research-to-practice gap in mental health care in schools.

This gap was also identified in a QLD primary school learning needs analysis [48] conducted by the Advisory Visiting Teachers (AVT) in conjunction with the Mater Child and

Youth Mental Health Service (CYMHS). The teachers described the types of behavioural, social, and emotional problems they observed and identified a knowledge gap in their ability to recognise and support children with developmental difficulties. Specifically, the teachers identified the need for greater theoretical knowledge in these areas, bridged with practical classroom applications to support these concerns. The MHLETP was developed as a pilot program to address these concerns with the intention to evaluate its success to inform future programs.

1.3. Theoretical Background

The educational experience students receive is related to the dedication, skill, and continuous professional development (CPD) of teachers [49]. One method to assess educational program effectiveness is Kirkpatrick's model, developed in 1959 [50,51] and the leading conceptual framework in training evaluation for over 60 years [51,52]. This model assesses training programs using four levels: (a) reactions (i.e., training satisfaction), (b) learning (i.e., knowledge acquired), (c) the behavioural changes (i.e., skill application), and (d) results in context (i.e., the overall effect of training in the context in which it is applied) [53]. This model has been utilised as the primary underpinnings of this study for two main reasons. Firstly, the program developers of the MHLETP based the methodology (i.e., the design and measures) of the program around the Kirkpatrick model. Secondly, the focus of the MHLETP evaluation is specifically on reactions (level one) and learning (level two; see Figure 1).
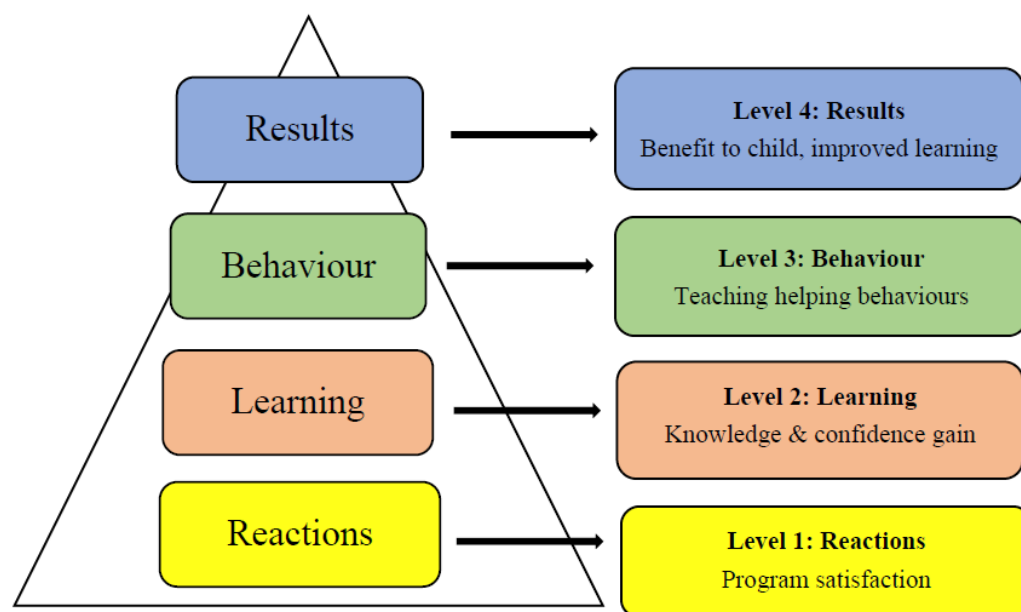

Figure 1. MHLETP Kirkpatrick Model. Note: Adapted from Alliger et al. [54].

The Kirkpatrick model has made substantial contributions to educational program evaluation by providing clarity on program outcomes beyond learner satisfaction [55]. This is relevant to MHL programs, which aim to provide outcomes to both teacher (e.g., classroom helping behaviours) and child (e.g., reduced symptoms and improved learning). There has been much debate over whether the levels are causally linked and positively intercorrelated or whether these levels are standalone. Cohen [56] reported a strong relationship between satisfaction with college instructor and courses, and learning achievement, whilst other researchers found weak positive and negative correlations [54,57]. This evaluation will test this relationship.

Other theories further complement the Kirkpatrick model. Firstly, this includes the consideration of antecedents, which may affect learning, such as variable levels of experience on entry [57]. This is consistent with Knowles' theory [58] which suggests experi-

ence to be a key feature of adult learning. Secondly, Bandura [59] considers the role of self-efficacy in learning. In this evaluation, two sources of Bandura's self-efficacy, the interaction of (a) knowledge (i.e., mastery expectation, and how well an individual considers themselves as accomplished) and (b) confidence (i.e., a psychological state of feelings of capacity) [59,60], expands the level two (learning) phase of Kirkpatrick's model.

1.4. Empirical Review

There is a paucity of MHL training evaluations, with many failing to follow-up with teacher helping behaviours towards students and the actual benefit to children (program outcomes at Kirkpatrick's levels three and four, respectively). Despite this, within the context of MHL, helping behaviours can be operationalised to include both the behaviour of providing help and also the intention and confidence to perform the behaviour [45]. Research suggests that confidence, intention, and feeling capable of assisting a person in need is strongly predictive of actual helping behaviours [61]. Consequently, although program outcomes may not be measured, the likelihood of the programs translating into helping behaviours may be reasonable. The variables of knowledge, confidence, satisfaction, and years of experience with observable outputs and outcomes were examined.

Knowledge. Systematic reviews of primary and secondary teachers have examined knowledge and confidence after program completion [62–64]. The most comprehensive review [64] focused on both primary and secondary teachers, identifying 16 MHL studies worldwide. Of these, 11 studies had significant improvements in knowledge from pre- to post-training, measured by objective knowledge quizzes on a range of mental health conditions, with medium-to-large effect sizes. However, only one study was a randomised control trial (RCT) which reported significant knowledge gains with a medium effect size, and only three studies included follow-up knowledge quizzes, reporting significantly maintained knowledge at nine weeks, six months, and one-year post-training, respectively. This indicates the need for the design methodology to include RCT studies and longitudinal follow-up periods to examine knowledge maintenance.

In investigating studies in key developmental areas, Ward et al. [65] conducted the first worldwide systematic review of 29 primary and secondary teacher training programs in ADHD. These programs included improving teacher knowledge in behavioural strategies, psychoeducation, and interventions for problematic classroom behaviours. Knowledge was measured in 17 studies using the Knowledge of Attention Deficit Disorder Scale (KADDS) [66], and others used their own developed scales, with no reported validity or reliability. A significant improvement in knowledge was reported in 15 studies with large effect sizes. However, only six studies included a follow-up period and only two were RCTs. On average, follow-up knowledge significantly decreased from post-training (although it still remained higher than at pre-training levels). Additionally, of the training programs that offered the greatest knowledge maintenance at follow-up, significant methodological differences were noted. This included booster sessions of additional training at two-and-a-half weeks post-training [67] and enrolment in a CPD program which included 16 ongoing hours of ADHD information sessions [68]. This indicates that standalone training sessions, whilst improving knowledge, may not be sufficient for knowledge maintenance, and RCTs and longitudinal design may provide research that is more robust.

Confidence. Confidence was only assessed in five studies reviewed by Yamaguchi et al. [64], with pre- to post-training questions including the confidence to speak with students about mental health and the ability to ascertain student state of mind. Significant improvements in confidence were noted in two of these studies. Jorm et al. [12] also found that the 14 h Youth Mental Health First Aid course delivered significant improvements in confidence in helping students, and these were maintained at six-months follow-up. Additionally, the Kids Matter Primary Program also revealed improvements in confidence at the end of the 2-year pilot. For example, 14% more teachers strongly agreed they could assist children to develop social and emotional competence, and 16% more teachers strongly agreed that their teaching could help children develop these mental

health competencies [69]. These results indicate a paucity of confidence assessments in the literature, however where measured improvements are noteworthy.

Satisfaction. Mixed method designs have been used to collect ratings of training satisfaction using questionnaires and participant feedback [70–72]. All studies reported positive feedback in both the belief that the training would confer new knowledge and skills and in the overall utility of the training. Additionally, qualitative feedback included an overwhelming theme that there was a need for continued or longer training than was provided [70,72]. This is consistent with the literature, which indicates that single-session training may not be sufficient [65]. Despite this, single-session training or workshops can provide teachers with a new interest and awareness, which can deepen their skills and knowledge [73]. This may explain why teachers reported high levels of satisfaction across all studies, irrespective of the feedback for more training.

Teachers' Years of Experience. A study of the MHL of Irish primary school teachers [74] explored teacher ability to recognise students with symptoms of anxiety and depression. Factors such as gender, years of teaching service, and previous exposure to student mental illness were used as predictors. Of these, only previous exposure had a statistically significant prediction about the ability to recognise symptoms. This indicates that it is not time in the teaching profession, but rather exposure, which is essential to building mental health skills. Further studies, which examine teacher experience with MHL, will be valuable for understanding this relationship.

Outputs and Outcomes of Training. Whilst immediate benefits in knowledge, confidence, and training satisfaction have been identified, actual teacher helping behaviours in the classroom (outputs) and benefits to children (outcomes) are important aspects of program evaluation [75]. The systematic review of MHL programs [64] identified only two studies that reported teacher helping behaviour post-training. The first was an RCT [12] that reported significant intentions to help students by having a discussion with a student or another teacher about mental health concerns. However, actual helping behaviours measured by whether they talked to or discussed a mental health problem with a student or staff member in the past month and at six-months follow-up found no significant improvements. Student feedback indicated that only general information about mental health in the form of class lessons, posters, and website links were provided. Additionally, the second study [13] asked participants whether a student had been helped at least once per month during the past year, in which no significant improvements were noted despite improved self-efficacy. Consequently, the knowledge and confidence improvements did not translate into actual helping behaviours, highlighting the need for longitudinal studies to investigate this relationship.

In contrast, the Kids Matter Primary Program [69] reported pleasing outcomes for children. The main reason for this could be the continuous nature of this program compared to the other programs reviewed which were standalones. Using the Strengths and Difficulties Questionnaire (SDQ) [76], mental health improvements were identified in one in five students who originally scored abnormally in the SDQ, resulting in significant reductions in peer problems, conduct concerns, emotional symptoms, and hyperactivity in the classroom [69]. The SDQ is a valid and reliable outcome measure for use in clinical settings and is suitable for use in developmental populations (e.g., ADHD) [77].

Despite the success of this program, Askell-Williams and Lawson, [78] identified the need to further improve these results by investigating other approaches to training. This is consistent with Ward et al. [65] who identified only six ADHD teacher training studies which measured teacher helping behaviours using blinded observations or self-report questionnaires. Of these, four reported significant improvements with common methodologies. The methodologies included taking a problem-solving approach over multiple sessions (6–15 sessions) by discussing specific problematic behaviours of a child as a group, considering possible strategies, and applying individual plans for the child [79]. These recommendations suggest the need to investigate beyond single-session programs and develop programs that support teacher MHL over the long-term.

1.5. Current Study and Significance

These hypotheses have been created with the core belief that children with developmental concerns will be more readily able to adapt and engage in the classroom environment if the MHL of teachers is improved. We base this belief on our ongoing process of co-produced research within the author team for this paper. These factors are particularly evident to the first author of this paper, whose primary-aged son struggles with the developmental concerns of dyslexia and ADHD, which result in significant difficulties in the classroom environment relating to socialisation, engagement, and academic achievement. Furthermore, the second author has also experienced the impacts of Autism through the challenges within his family. Namely, the second author is the father of a child with Autism and in this role has witnessed struggles with classroom engagement and self-regulation. These struggles have been attenuated when teachers with higher MHL are available to develop and enact adaptive instruction according to knowledge founded in the MHL framework underpinning the MHLETP intervention.

Accordingly, our lived experiences suggest the need for improving the MHL of teachers through practical teaching programs, and that these programs represent a positive step in improving the difficulties faced by children with developmental concerns. Specifically, our experiences suggest that through improvements in MHL, teachers will become more aware of the developmental conditions that exist and how these can manifest in the classroom. As a result, these teachers will be able to identify struggling children and respond to their needs by providing an inclusive classroom through specific supports to cater to their needs. Our experiences also suggest that teachers with higher MHL will be equipped with the knowledge to better communicate with parents and caregivers and to better engage and refer to professionals for intervention services to provide further support. It is our experience that improving the engagement of children with developmental concerns in the classroom will result in improvements within the home, as children feel more supported and happier with their school interactions and achievement.

In evaluating program effectiveness, Kirkpatrick's model considers that knowledge and confidence represents a key learning output of the program. Empirical research supports this; however, for single-session training, there are mixed results on knowledge and confidence maintenance with no evidence of translation to teacher helping behaviours. Consequently, the following hypotheses were proposed:

Hypothesis 1. *Self-perceived level of knowledge will increase from pre- to post-training for the ADHD/SLD/SPD combined training modules.*

Hypothesis 2. *Self-perceived level of confidence will increase from pre- to post-training for the ADHD/SLD/SPD combined training modules.*

Hypothesis 3. *A higher level of post-training confidence is correlated with a higher level of post-training knowledge for the ADHD/SLD/SPD combined training modules.*

There is much debate over whether satisfaction as identified in Kirkpatrick's model is correlated with learning. To the best of our knowledge, this has not been assessed in a MHL training context. The following hypotheses were proposed:

Hypothesis 4. *As a direct effect, a higher level of total satisfaction will be correlated with a higher level of post-training knowledge for the ADHD/SLD/SPD combined training modules.*

Hypothesis 5. *As a direct effect, a higher level of total satisfaction will be correlated with a higher level of post-training confidence for the ADHD/SLD/SPD combined training modules.*

In analysing the complex relationship of training satisfaction on knowledge acquisition, a moderated mediation model was proposed which is a novel and unique contribution to

the literature expanding on Kirkpatrick's model. This included post-training confidence as a mediator given that individuals with greater levels of confidence are more likely to be motivated to learn [80]. Further, Bandura's [59] theory of self-efficacy considers confidence to be a source of psychological feedback. It is envisaged confidence would influence knowledge acquisition. Additionally, years of teacher experience was included as a moderator, with experience identified as an antecedent to learning by Knowles [58]. This determines whether experience would influence confidence levels if the participant was satisfied with the training. Figure 2 shows the moderated mediation to evaluate the MHLETP along with the hypotheses proposed:
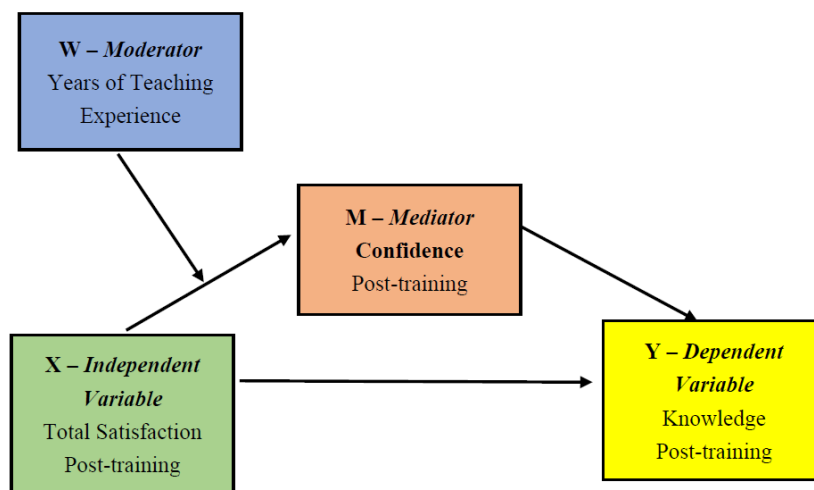

Figure 2. Moderated Mediation Model to Evaluate Outputs of the MHLETP.

Hypothesis 6. *Total satisfaction post-training, mediated by confidence post-training, will display an indirect effect to the level of knowledge acquired post-training for the ADHD/SLD/SPD combined training modules (indirect effect for mediator alone).*

Hypothesis 7. *Total satisfaction post-training, moderated by years of teaching experience, will predict the level of confidence acquired post-training for the ADHD/SLD/SPD combined training modules (moderation effect on mediator).*

Hypothesis 8. *The total effect of total satisfaction post-training, moderated by years of teaching experience and mediated by the level of confidence acquired post-training will predict the level of knowledge post-training for the ADHD/SLD/SPD combined training modules (total effect of both moderator and mediator together).*

2. Method

The current study utilises archival data collected over three years (2013–2015) of the MHLETP developed by the third author of this paper in collaboration with a number of representatives from public health and public education institutions. This program included twelve training sessions covering mental health topics commonly encountered by teaching staff in primary schools. The focus of this study was on the developmental topics of ADHD, SLD, and SPD. Ethics was approved by the University of Southern Queensland (USQ) Human Research Ethics Committee (HREC; approved H22REA132).

2.1. Participants

Participants were recruited via convenience sampling, where teachers working in government state schools within the Brisbane South and Metropolitan areas of QLD were targeted with informative posters to sign-up for training. Participants included classroom teachers, teacher aides, support staff, behaviour support teachers, and educational leaders. The training sessions ADHD, SLD, and SPD combined over the three years included

81 participants with a mean age of 36.90 years (range of 29 to 56 years) and a standard deviation of 3.79 years. Of the participants, 93% were females (75 participants) and 7% were males (6 participants). The mean years of teaching experience was 9.36 years (range of 1 to 24 years), with a standard deviation of 4.37 years. The three years of data were aggregated because the training was identical each year in terms of content, materials, educational speakers, and session duration.

2.2. Measures

All participants signed up for the training by emailing the administration officer to express their intention to undertake the program. The participants' age, gender, role, years of experience, and school were collected at this time. Years of experience will be utilised as a continuous variable and moderator. The training evaluation measures consisted of pre- and post-training questionnaires adapted from a service-wide template used by the public health service. As these templates were designed to provide descriptive statistics to guide future quality improvement initiatives, there were no psychometric data such as validity and reliability to report. When preparing archival data for analyses, some data were omitted due to concerns with missing data and data-entry errors.

Pre-training Questionnaire. The questionnaire included a unique participant identification code (ID) requiring the participant enter the two digits of their month of birth, the first three letters of their mother's maiden name, and the two digits of their day of birth. The questionnaire included a series of questions which involved asking participants 'how much knowledge do you feel you have in this topic' on a Likert scale from 1 (no knowledge) to 5 (lots of knowledge), with a higher score indicating a higher level of knowledge. Participants were also asked 'how confident are you feeling about being able to take something useful away from the training?' on a Likert scale from 1 (very unconfident) to 5 (very confident), with a higher score indicating a higher level of confidence.

Both the knowledge and confidence questions represent single-item constructs, where reliability can only be established via test–retest analysis or with parallel forms [81]. This was not previously conducted on this archival data set. However, multiple researchers [82,83] have found that single-construct items are robust and very reliable for simple, concrete, and unambiguous constructs. Knowledge and confidence are considered to meet these criteria.

Content validity relies on judgement of whether the item content is valid, with the face validity method considered subjective but effective with appropriate professionals [84]. The team designing the intervention was composed of a clinical psychologist and mental health researcher, along with health and educational professionals. Face validity is considered achieved.

Post-training Questionnaire. The post-training questionnaire included a participant ID identical to the pre-training questionnaire and a series of questions after training completion. Participants were presented with similar knowledge and confidence questions as the pre-training questionnaire. This includes 'How much knowledge do you feel you have on the topic of this presentation?' on a Likert scale from 1 (no knowledge) to 5 (lots of knowledge), with a higher score indicating a higher level of knowledge. For confidence, participants were asked 'I am confident that I will be able to use the ideas presented in this training to change how I work' on a Likert scale from 1 (very unconfident) to 5 (very confident), with a higher score indicating a higher level of confidence. The knowledge post-training score will be utilised as a continuous, dependent variable, whilst the confidence post-training score represents a continuous mediator variable, per Figure 2.

A series of six training satisfaction questions was also presented to participants, each measured on a Likert scale from 1 (low) to 5 (high), with a higher score indicating a higher level of satisfaction. These questions include, 'This training has met my expectations', 'Appropriate for intended audience', 'I am satisfied with the level of practical knowledge and skills presented at this training', 'Visuals, handouts & oral presentations clarified content', 'Appropriate for subject matter', and 'Room was adequate and appropriate for session'.

Training satisfaction was measured over six questions and a composite *total satisfaction* utilised, which is the mean of all responses for each participant. Composite scores have been found to outperform single-item constructs in predictive validity [85]. Reliability analysis using Cronbach alpha was conducted to determine how well the amalgamation of these six training satisfaction items work together [86]. *Total satisfaction* was found to have excellent reliability (Cronbach alpha 0.93). This score will be utilised as a continuous independent variable.

2.3. Procedures

This research draws upon both a cross-sectional and longitudinal study design. Questions pertaining to knowledge and confidence are asked both pre- and post-training and represent a longitudinal study design. However, specific questions pertaining to satisfaction are only asked at post-training, representing a cross-sectional study design.

A poster for the training was distributed through the networks of government state schools in the Brisbane South and Metropolitan catchment areas and supported by the corresponding behaviour support team. Participants could sign-up via email by contacting the administration officer listed on the poster. Participants were then emailed a series of questions capturing demographic data and the pre-training questionnaire along with information about the program evaluation. The return of the pre-training questionnaire was considered informed consent.

Training sessions were conducted once a fortnight during the first and second school terms of each year. Training sessions were designed to be of 1.5-hours duration, with a speaker from the public mental health service and from public education speaking for approximately 45 min each. Training was facilitated at a state school in the South Brisbane region in Queensland, Australia, with afternoon tea provided.

On completion of training, a brief one-page handout of the presentation was provided to all participants and emailed if requested. Participants also completed a post-training questionnaire via paper and were requested to return this before leaving the training room. Each participant was awarded a certificate of completion.

All pre- and post-training questionnaires were printed and stored in a locked cabinet at the public health facility office. All data were entered into Microsoft Excel spreadsheets by the administration officer and Statistical Package for Social Sciences (SPSS) by the head researcher. These were password protected in a One-drive folder. For this archival study, the supervisor was granted access to these data and stored the data on a USQ One-drive folder, cloud backup, and secured server. As this study utilised archival data, there were no participants or risk involved.

3. Results

An a priori power analysis using G*Power (www.psychologie.hhu.de, accessed on 24 July 2022) version 3.1.9.7 [87] for multiple regression with three predictors was used to model the effects and to determine the sample size required to detect an effect in this study. This was based on using the three predictive variables detailed in Figure 2, which were the independent variable and the moderator and the mediator variables. This analysis used a type one error of 0.05 with a medium effect size $f^2 = 0.15$ and a study power of 0.80 (80%), or the chance of a type two error of 0.20 (20%). This indicated that the study required a minimum of 77 cases of data, resulting in the sample size of 81 being sufficient to test the hypotheses.

A data analysis was performed with IBM SPSS Statistics version 28 and PROCESS version 4.1 macro for SPSS [88]. Utilising these software, descriptive and inferential statistics were conducted. The analyses included the means, standard deviations, Pearson correlation matrix, paired samples *t*-tests, and a moderated mediation analysis.

3.1. Analysis Plan

Prior to the analysis, data cleaning and normality testing were conducted. Missing data were identified on all ten variables of interest at the rate of 1 to 6 items (1.2% to 7.4%) on each variable. With only 81 cases, a visual inspection of the data matrix determined the missing values were Missing At Random (MAR) [89]. A mean replacement is recommended if the data are *MAR* and less than 5% of the variable [81,90]. With small amounts of missing data, and only two variables slightly above the 5% recommended cut-off, the mean replacement was applied.

A visual inspection of the boxplots and transformed 'z-scores' were applied to all the variables, with a z-score cut-off for outliers of ± 3.29 [81,91]. Two of the participants were found to be outliers. ID 220 was the only participant to score 5/5 on the pre-confidence measure, and ID 235 scored 1/5 on all post-training measures of confidence, knowledge, and satisfaction. Both of these were considered non-spurious and retained in the sample [81]. It is possible for participants to bring a strong level of confidence to the training and equally to feel completely dissatisfied with the training provided.

A univariate analysis, for assumptions and normality, involved a visual inspection of histograms which found that all six post-training satisfaction variables were highly skewed to the right, indicating that most participants scored high levels of satisfaction (4 or 5) with low variability [92]. The pre-knowledge variable was slightly skewed to the left, the post-knowledge and post-confidence variables were slightly skewed to the right, and the pre-confidence variable was normally distributed. P-P plots showed a normal distribution for all the variables [93]. The skewness and kurtosis were within normal acceptable limits of ± 2.00 for all the variables [81,86], except for satisfaction with the subject matter (kurtosis 2.141) and satisfaction with the venue (kurtosis 2.688) which were slightly above but close enough to the cut-off of ± 2.0 to avoid undue concern when employing bootstrapping.

Additional assumption checks for the multivariate analysis and multicollinearity were performed to satisfy the requirements for moderated mediation regression. A visual inspection of the scatterplots of the standardised residuals against the standardised predicted values indicated slight heteroscedasticity. Inspections of the Q-Q plots of the standardised residuals revealed normal distributions. The Mahalanobis distance and Cooks distance were considered but not performed due to the small sample size and risk of invalid results [81]. The tolerance statistics (>0.10) and Variance Inflation Factors (<10) were tested on the independent variable and the moderator and mediator variables in Figure 2, indicating no issues with multicollinearity [81].

In conclusion, some non-normality was present and as such bootstrapping was used in the SPSS to resample and estimate the sampling distribution [94]. Bootstrapping was applied at a rate of 5000 bootstrap replications, which is considered very safe in producing accurate results [95]. The analysis proceeded with computing the (a) paired-samples *t*-tests, (b) Pearson correlations, including the means, standard deviations, and Cronbach's alpha, and (c) a moderated mediation using PROCESS model 7.

3.2. Paired-Samples t-Test

A paired-samples *t*-test was conducted for hypotheses one and two. Table 1 shows the differences in knowledge pre- to post-training and confidence pre- to post-training. The results show that the mean knowledge score improved from pre-training ($M = 2.44$, $SD = 0.67$) to post-training ($M = 3.96$, $SD = 0.86$) with a large effect size ($d = 1.01$) [96], indicating that on average the knowledge improved by a score of 1.52 post-training ($t(80) = -13.37$, $p < 0.001$, 95% CI $[-1.73$ to $-1.28]$). Similarly, the mean confidence score improved from pre-training ($M = 2.53$, $SD = 0.65$) to post-training ($M = 3.88$, $SD = 0.86$) with a large effect size ($d = 1.07$) [96], revealing on average the confidence improved by a score of 1.35 post-training ($t(80) = -11.27$, $p < 0.001$, 95% CI $[-1.57$ to $-1.12]$).

Table 1. Differences Between Pre- and Post-Training Knowledge and Confidence Scores.

	Pre-Training		Post-Training		95% CI for Mean		
	M	*SD*	*M*	*SD*	**Difference**	*T*	**Cohen's d**
Knowledge	2.44	0.67	3.96	0.86	[−1.73, −1.28]	−13.37 *	1.01
Confidence	2.53	0.65	3.88	0.86	[−1.57, −1.12]	−11.27 *	1.07

Note: *N* = 81. * *p* < 0.001 (2-tailed). *df* = 80. Bootstrapping at 5000 replications.

3.3. Pearson Correlations

The descriptive statistics and correlations are presented in Table 2. A composite score was calculated consisting of the means of the six training satisfaction items, named total satisfaction. This was calculated to have an excellent Cronbach alpha of 0.93 [81,86]. The results for hypothesis three show that post-training knowledge and post-training confidence were significantly and positively correlated with a strong relationship [96], suggesting that higher levels of knowledge occur together with higher feelings of confidence (r(81) = 0.85, *p* < 0.01). In examining the direct effects of hypotheses four and five, the total satisfaction was significantly and positively correlated with post-training knowledge and post-training confidence with strong relationships [96], suggesting that higher levels of training satisfaction were associated with higher levels of knowledge acquisition and confidence attainment, (r(81) = 0.75 and r(81) = 0.79, respectively, *p* < 0.01).

Table 2. Summary of Means, Standard Deviations, and Pearson Correlations for Age, Experience, Knowledge, Confidence, and Satisfaction Scores.

Variable	*M*	*SD*	1	2	3	4	5	6	7	8	9	10	11	12	13
Age	36.90	3.79	-												
Years of Experience	9.36	4.37	0.52 **	-											
Pre Knowledge	2.44	0.67	0.00	0.03	-										
Pre Confidence	2.53	0.65	−0.17	−0.06	−0.10	-									
Post Knowledge	3.95	0.86	−0.14	−0.10	0.15	0.03	-								
Post Confidence	3.88	0.86	−0.19	−0.10	0.08	0.00	0.85 **	-							
Met Expectati-ons [a]	4.20	0.95	−0.20	−0.09	0.14	−0.05	0.80 **	0.83 **	-						
Appropriate for Audience [a]	4.26	0.95	−0.22 *	−0.10	0.13	0.02	0.72 **	0.78 **	0.86 **	-					
Knowledge and Skill Presented [a]	4.22	0.94	−0.14	−0.05	0.16	−0.01	0.68 **	0.74 **	0.85 **	0.90 **	-				
Training Format [a]	4.20	0.87	−0.09	−0.03	0.06	0.14	0.60 **	0.64 **	0.73 **	0.70 **	0.74 **	-			
Subject Matter [a]	4.27	0.82	−0.16	−0.09	0.10	0.08	0.65 **	0.65 **	0.80 **	0.76 **	0.82 **	0.90 **	-		
Venue [a]	4.27	0.82	−0.12	−0.16	−0.30 **	0.15	0.46 **	0.46 **	0.55 **	0.52 **	0.49 **	0.50 **	0.50 **	-	
Total Satisfaction Score [b]	4.24	0.78	−0.18	−0.10	0.17	0.06	0.75 **	0.79 **	0.92 **	0.91 **	0.92 **	0.87 **	0.91 **	0.67 **	-

Note: *N* = 81. [a] training satisfaction items. [b] composite score. * *p* < 0.05 (2-tailed). ** *p* < 0.01 (2-tailed). Bootstrapping at 5000 replications.

3.4. Moderated Mediation

A moderated mediation analysis was conducted using PROCESS model 7 for the SPSS [88], to test hypotheses six to eight. Mean centring and bootstrapping at 5000 replications was used. Table 3 shows the direct, indirect, and total effects. Hypothesis six was supported, whereby the total satisfaction mediated by confidence post-training accounted for a significant variation in the post-training knowledge attained R^2 = 0.74; $F(2,78)$ = 112.66, *p* < 0.001. This indicates that the set of three predictors (total satisfaction, confidence post-training, and years of teaching experience) accounted for around 74% of the variance in post-training knowledge acquisition. In examining the significance of direct effects, a partial mediation was noted, where the first stage of the mediator, the total satisfaction to confidence post-training, had the highest effect (*b* = 0.86, *t* = 10.59, *p* < 0.001), followed by the second stage of the mediator, confidence post-training predicting knowledge post-training (*b* = 0.69, *t* = 7.35, *p* < 0.001). In comparing the separate effects, the direct effect of total satisfaction on knowledge post-training had the lowest effect (*b* = 0.24, *t* = 2.27,

p < 0.026). The Sobel test was not conducted to test the strength of the mediation effect as this is not recommended for smaller sample sizes [81].

Table 3. Moderated Mediation Regressions for Total Satisfaction: Direct, Indirect, and Total Effects.

Variable	*B*	*SE*	*T*	*P*	95% CI
Direct Effects					
X → Y	0.24	0.10	2.27	0.026	[0.03, 0.44]
X → M	0.86	0.08	10.59	<0.001	[0.70, 1.02]
M → Y	0.69	0.09	7.35	<0.001	[0.50, 0.88]
Indirect Effects					
X → M → Y	1.27	0.37	3.45	<0.001	[0.54, 2.0]
X → W → Y	0.00	0.01	0.13	0.899	[−0.03, 0.03]
Total Effects	0.00	0.01			[−0.02, 0.03]

Note: *N* = 81. CI = confidence interval; X = total satisfaction; Y = knowledge post-training; M = confidence post-training; W = years of teaching experience. Standard error based on 5000 bootstrap samples.

Hypothesis seven was not supported, whereby the total satisfaction moderated by years of experience had an insignificant effect on confidence post-training. The interaction term which is the total satisfaction and years of experience was insignificant in the model (*b* = 0.00, *SE* = 0.01, 95% CI [−0.03, 0.03], *p* > 0.05), meaning that the slope for the effect of total satisfaction on confidence post-training did not vary across the levels of years of experience.

Hypothesis eight, which proposed that the total effect of the total satisfaction moderated by years of experience and mediated by the level of confidence acquired post-training will predict the level of knowledge post-training, was not supported given the moderation (years of experience) was insignificant in this model. The index of moderated mediation (IMM) is considered an omnibus test for moderated mediation and measures the degree to which the indirect effect in the model was moderated. The IMM was *b* = 0.001, 95% CI [−0.02, 0.03]. As zero falls within the upper and lower bound of the confidence interval present, this effect is insignificant. However, although there is no moderation present, the indirect effect with the mediation is active and significant at every level of years of experience, as seen in Table 4. Figure 3 illustrates the moderated mediation model with effects.
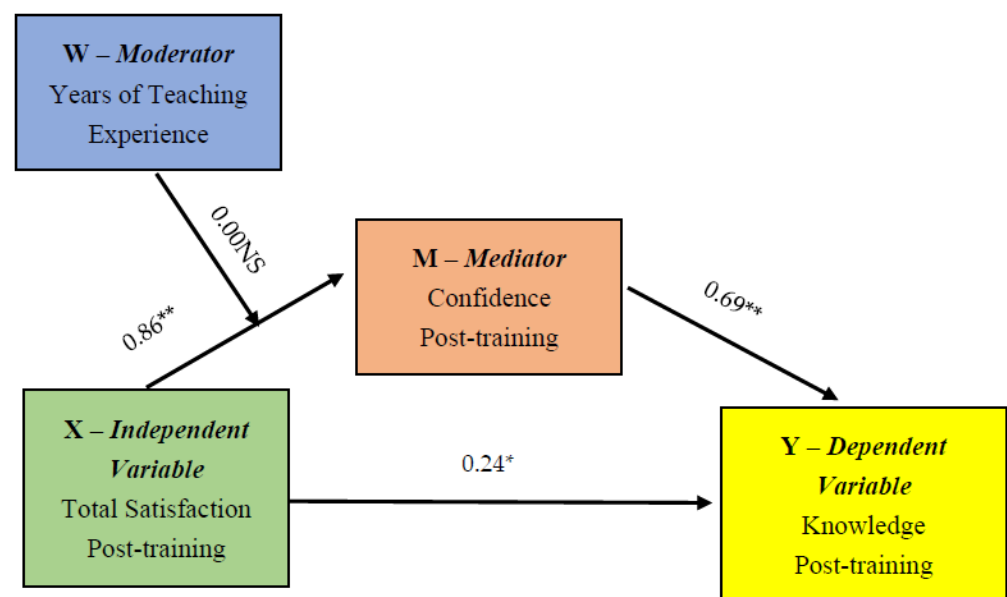

Figure 3. Moderated Mediation Model for Direct, Indirect, and Total Effects. Note: * *p* < 0.05, ** *p* < 0.01, NS = non-significant.

Table 4. Conditional Indirect Effects of Total Satisfaction, Mediated by Confidence on Knowledge Post-Training.

Years of Experience	*B*	*SE*	95% CI
+1 Standard Deviation	0.59	0.12	[0.35, 0.82]
Mean	0.60	0.11	[0.39, 0.81]
−1 Standard Deviation	0.60	0.12	[0.36, 0.86]

Note: *N* = 81. CI = confidence interval. Standard error based on 5000 bootstrap samples.

4. Discussion

MHL programs may improve the ability for teachers to recognise and support struggling children, mitigating the risks for lifelong poor mental health. This study explored knowledge and confidence on completion of the MHLETP, including the complex effects of training satisfaction, years of experience as a moderator, and confidence as a mediator in achieving knowledge acquisition. A discussion of the results of each hypothesis, the theoretical and practical implications, and future directions will follow.

Hypothesis one proposed that a self-perceived level of knowledge will increase from pre- to post-training and was supported by this study ($t(80) = -13.37$, $p < 0.001$, 95% CI [−1.73 to −1.28]) with a large effect size ($d = 1.01$). This is consistent with the previous literature [12,64,65] which also found significant improvements in knowledge post-training. The reasons may relate to the appropriate training design, which included both theoretical and practical aspects of developmental and mental health concerns identified by teachers in the learning analysis [48] Furthermore, the evidence suggests one-off workshops may deepen knowledge and provide new awareness [73].

Hypothesis two proposed that a self-perceived level of confidence will increase from pre- to post-training and was supported by this study ($t(80) = -11.27$, $p < 0.001$, 95% CI [−1.57 to −1.12]) with a large effect size ($d = 1.07$). This is consistent with the previous literature [12,64,69]. Additionally, with both knowledge and confidence improving after training, hypothesis three proposed that a higher level of confidence post-training would be correlated with a higher level of knowledge post-training. This was supported, presenting a significant and positive correlation with a strong relationship ($r(81) = 0.85$, $p < 0.01$). This may be explained by the prior research suggesting that confidence in learning ability may lead to an individual investing effort in learning, which would have a reciprocal effect via increasing the existing confidence [80].

Hypotheses four and five proposed that a higher level of total satisfaction would be correlated with a higher level of knowledge and confidence post-training. This study supported these hypotheses, with the total satisfaction showing strong positive correlations with knowledge ($r(81) = 0.75$, $p < 0.01$) and confidence ($r(81) = 0.79$, $p < 0.01$) post-training. Previous MHL studies have assessed training satisfaction, finding positive results [70–72,97] and indicating that MHL programs were well received by participants. However, no studies to our knowledge have examined the correlations between training satisfaction with knowledge and confidence post-training. Conceptually, it appears that if participants are satisfied with training, their knowledge and confidence would also improve, explaining the correlations between them. This is likely as attitudes in general, and satisfaction in particular, can affect learning [54,98,99].

Hypothesis six proposed that total satisfaction, mediated by confidence post-training, would display an indirect effect on the level of knowledge acquired post-training. This hypothesis was supported ($R^2 = 0.74$; $F(2,78) = 112.66$, $p < 0.001$), with the predictors accounting for around 74% of the variance in knowledge acquisition. The previous MHL studies have not examined this indirect effect. Conceptually, it appears reasonable that total satisfaction and confidence post-training would influence knowledge acquisition, given the correlations found between these variables in earlier hypotheses.

Hypothesis seven proposed that total satisfaction, moderated by years of teaching experience, will predict the level of confidence acquired post-training. This was not supported ($b = 0.00$, $SE = 0.01$, 95% CI [−0.03,0.03], $p > 0.05$), in that total satisfaction

predicting confidence post-training did not vary across the levels of years of experience. This is consistent with one aspect of the previous research, which demonstrated that it is not time teaching in the profession, but rather exposure to particular mental health concerns, which facilitates MHL gains [100]. Conceptually, this may appear as teachers having contact with students experiencing mental health concerns but never really reflecting on their needs. Such an explanation is plausible, despite participants having an average of nine years of experience in this study. This confirms the need for teacher MHL training.

Hypothesis eight was not supported in this study, with the IMM omnibus test demonstrating that the moderation was insignificant ($b = 0.0012$, 95% CI [$-0.02, 0.03$]). This shows that the conditional indirect effect (with the mediation path but without the moderator) was significant and operating at every level of the years of teaching experience.

4.1. Theoretical Implications

This study has three main theoretical implications for training providers seeking to create training programs to improve the MHL of primary school teachers. Firstly, this study tests the premise of Kirkpatrick's theory, which proposes that reactions (training satisfaction) may lead to learning (knowledge). There has been much debate regarding the causality of reactions and learning, with some evidence of a strong relationship [56] and others with weak positive or negative correlations [54,57,63]. However, to our knowledge, this theory was not previously considered in the MHL literature, making this study particularly novel. The findings indicated that training satisfaction is correlated and a predictor of both knowledge and confidence. This suggests that creating satisfying training programs, which appeal to primary school teachers, will be an important way of ensuring knowledge and confidence improvements are realised. As this study was designed from the learning needs analysis of teaching staff in QLD [48] it is reasonable to assume that the training met the needs of teachers as explained by the high satisfaction scores reported.

Secondly, this study provides a theoretical foundation for extending the scope of Kirkpatrick's level two learning phase. In considering the role of self-efficacy in learning, Bandura [59] posits the interaction of knowledge (mastery) and confidence (psychological aspects) to be important attributes [60]. This study identified that knowledge and confidence were both strongly correlated, and that confidence had a mediating effect on knowledge acquisition. Furthermore, this research supports findings that ADHD knowledge improvements correlate with confidence in managing behavioural issues in the classroom [19,66,89]. As the overall goal of MHL programs involves improving teacher helping behaviours in the classroom, leading to improved childhood outcomes, measuring knowledge, confidence, and their interaction is a key indicator of the likelihood of achieving this goal.

Thirdly, this study is similar to other work that has examined individual differences in reference to Kirkpatrick's model [57,101]. Antecedents that impact learning, such as years of teaching experience, were identified by Knowles [58] as a key feature of adult learners. However, this theory was not supported as a moderator. It is likely that exposure to mental health concerns is more important than years of experience [100]. When creating training programs, it should not be assumed that more experienced participants will have greater MHL.

4.2. Practical Implications

There are three ways training providers may respond to the need of creating successful MHL programs. Firstly, compulsory MHL training for all educators across all experience levels may be beneficial given that teaching experience has no impact on knowledge. This may ensure that all students have equal access to knowledgeable teachers. This also emphasises the relevance of the key strategy identified by the NCMHWS [9] to build teacher capacity to support childhood mental health by addressing variability in teacher knowledge to achieve a minimum standard of childhood mental health awareness. However, caution is needed because this study included participant and self-selection bias, indicating that

only teachers interested in learning attended training rather than all teachers who may require it. This self-selection process also contributed to predominantly females attending.

Secondly, training satisfaction plays an important role in achieving knowledge and confidence gains. Training providers of MHL programs will need to continuously monitor and obtain feedback from participants regarding the training. Although this study used a questionnaire to obtain this feedback, other methods may include holding semi-structured interviews after training to determine what was liked (or not) about the training. For example, Sitzmann et al. [101] identified that trainers with a warm, open style improved training satisfaction, which may inform the future development of programs.

Thirdly, the notable strength of this study is the focus on recognising that developmental concerns may have serious impacts on childhood mental health, resulting in the need to improve teacher knowledge and confidence in this area [48] There is a paucity of teacher MHL studies generally, even more so within the primary school years, and to the best of our knowledge none that specifically examine a range of developmental concerns. Additionally, of the MHL studies that exist, none have examined the complex effects or relationships between training satisfaction, experience, and self-efficacy. Consequently, this study can be considered a novel approach to the design and evaluation of teacher MHL programs and provides preliminary evidence for the inclusion of developmental conditions in future programs.

4.3. Limitations

Despite these positive contributions, there are four notable limitations with this study. Firstly, this study is at risk of ceiling effects, weakening the reliability and validity of the satisfaction measure [102–104]. The six satisfaction scores were skewed to the right, indicating that most participants scored a high level of satisfaction, establishing a low variability in the scores [92]. These high satisfaction levels may create methodological concerns, as statistical tests require a normal distribution which reduces the ability and power of detecting meaningful effects [102]. Furthermore, it may be problematic to obtain an accurate measure of central tendency [102]. Although bootstrapping was performed to correct normality before the data analysis, ceiling effects are likely to impact results, indicating the need for an improved scale to mitigate this risk.

Secondly, the sample may not be representative of or generalisable to the population of Australian primary school teachers due to the small sample size. This sample is dominated by female teachers (93%), well above that of females (72%) in the population [105]. Furthermore, as participants were convenience sampled from a selection of QLD state government schools, independent and Catholic schools were excluded, where 35% of Australian children are also educated [106]. Additionally, participation and self-selection bias may be present. It is possible that those who chose to participate may have had higher levels of motivation and understanding of MHL than other teachers who chose not to participate, potentially skewing the results to produce favourable outcomes.

Thirdly, this study focussed on immediate outputs in measuring teacher knowledge and confidence on training completion. Teacher helping behaviours (output, level 3 Kirkpatrick) and benefits to children (outcome, level 4 Kirkpatrick) were not measured. This is consistent with the majority of MHL studies with inadequate follow-up periods of analysis [64]. Furthermore, without follow-up, it is unclear whether single-session training was sufficient, with many studies suggesting that other approaches are required to maintain knowledge [78,79,107,108]. Additionally, the outputs were measured using internally created scales with difficulty determining the reliability and validity. All the scales relied upon participant self-reporting, with no means of objectively measuring the knowledge, confidence, or training satisfaction levels. Consequently, self-report bias may lead to common method variance, resulting in inflated relationships between variables [109]. These factors indicate the need for longitudinal designs and a review of more appropriate methods to measure outputs and outcomes in program evaluation.

Finally, this study is lacking a control group, which limits rigour. A control (or waitlist) of teachers compared to a group of teachers who completed training would enable an examination of variances in knowledge and confidence levels. This would determine the true effectiveness of the program over normal incidental learning as observed in limited other studies [12].

4.4. Directions for Future Research

Several approaches may mitigate the risk of ceiling effects in evaluation studies. For example, a change in anchor labels within a study may be a valid method for attenuating ceiling effects [110]. As another alternative, the visual analogue scale has been found to reduce the ceiling effect compared to Likert scales, as it is sensitive in detecting variations in the upper ranges of scales [104]. Additionally, ceiling effects may be reduced by increasing the range of scale options [111]. Research has shown that a 10-point Likert scale may reduce average scores by a statistically significant 0.3 points, compared with using a 7-point or 5-point Likert scale [112].

The representation and generalisability of future MHL studies could be improved most crucially by including a larger number of cases in future samples, and the distribution of these cases needs to more closely match the ratio of females to males (72% females) in the teaching population. In addition, compulsory training for teachers across all years of experience is suggested, which is in line with recommendations from the NCMHWS [9]. Compulsory training for teaching staff will likely remove the participation and self-selection biases identified as limitations. Consequently, the results of this study may be different with a greater proportion of male teachers and teachers with varying levels of interest participating in the program. Furthermore, a greater cross-section of schools including independent and Catholic schools would be preferable as a high proportion (35%) [105] of students are educated in these alternative environments. It is possible that teacher exposure to MHL may be different from that in the state education system, and therefore including teachers in all environments may provide a more generalised program evaluation.

Future studies may consider a longitudinal design approach including a control group at varying time points, where teacher knowledge and confidence could be measured along with actual help provided to students, six months or more post-training. This would establish a program maintenance phase of the research and provide a comparison between teachers who completed training with those that did not. Additionally, scales with proven reliability and validity could be utilised, such as the Training Satisfaction Rating Scale [113] and the KADDS [66], which is an objective measure of knowledge rather than a self-report that is subject to bias. In examining outcomes to children, a developmentally appropriate outcome tool could be used to measure childhood behavioural difficulties before training and at various future time points (six months or more). This may include use of the SDQ [76]. These may be useful additions in future MHL studies to determine long-term program effectiveness.

4.5. Conclusions

In summary, a total of 81 participants were used in this analysis, with results providing new insights into teacher MHL training. The knowledge and confidence improved on training completion, and significant complex effects were found in training satisfaction, mediated by confidence after knowledge acquisition; however, years of teaching experience had no moderating effect. This study recommends a longitudinal design approach in future studies. Considering teaching helping behaviours and benefits to children will be important next steps in teacher MHL program development and evaluation.

Institutional Review Board Statement: Ethics was approved by the University of Southern Queensland (USQ) Human Research Ethics Committee (HREC; approved H22REA132).

Informed Consent Statement: No participants were recruited for this evaluation, as archival data was used.

Data Availability Statement: No new data were created.

Conflicts of Interest: The authors declare no conflict of interest.

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