

## Review

# Mental health education in Australian paramedic curricula – A scoping review

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<https://doi.org/10.33151/ajp.17.791>

## Abstract

### Introduction

Mental health represents a growing concern for health services in Australia. Paramedics are increasingly becoming the first point-of-contact for patients experiencing an acute mental health episode. Despite this increasing prevalence of cases there is an established body of literature outlining that paramedics feel inadequately trained to manage these patients.

### Aim

This research aimed to identify how the management of acutely unwell mental health patients is included in paramedic curricula in Australia.

### Methods

A scoping review methodology was used in association with a thematic analysis of university learning outcomes related to mental health education for Bachelor of Paramedic programs in Australia. It was identified that there are considerable discrepancies between university learning outcomes for mental health education of paramedics.

### Discussion

Mental health management of patients is not integrated throughout curricula, with most students only being exposed to mental health education once in their degree usually as a theoretical subject with no specific mental health practice placement. Further, the existence of discrepancies regarding mental health management education between paramedic courses creates an unequal minimum standard of education among graduating paramedic students.

### Conclusion

Given the prevalence of mental health cases and the special powers that paramedics have to manage these cases, as well as the fact that mental health does not discriminate between jurisdictions (ie. patients present and should be managed similarly in all states and territories), the authors argue that special consideration by the profession should be given to mandating a consistency in mental health management education across all paramedic Bachelor degree programs.

Keywords:

paramedic; mental health; education

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## Introduction

Mental health (MH) makes up 12.1% of Australia's total burden of disease and is the single largest contributor to decreased quality-of-life ahead of musculoskeletal and respiratory disorders (1). The prevalence of this burden has a direct impact on the pre-hospital care environment. Due in part to a lack of investment in sufficient community MH services, paramedics have increasingly become the first point-of-contact for patients experiencing a MH crisis (2). Shaban found that some state ambulance services reported a 10-fold increase in MH epidemiology over the past 10 years (3). Despite the increase in the number of patients experiencing MH issues that require care, there is an established body of literature outlining that paramedics feel inadequately trained to manage these patients (2,4-14). Roberts and Henderson suggest that the overwhelming majority of Australian paramedics with less than 5 years of experience (75.9%) reported feeling insufficiently trained to manage MH presentations (6). This finding is supported internationally, with 98% of 609 United Kingdom paramedics reporting that there should be more education and training in understanding and managing MH conditions (9). These findings suggest that a theory-practice gap exists between education and how prepared paramedics feel to effectively manage patients experiencing a MH crisis.

Despite the identified theory-practice gap, there is a paucity of research analysing the scope of MH education in paramedic curricula in Australia. Over the past two decades, paramedic education in Australia has transitioned from a vocational model to tertiary education (15). Additionally, paramedics recently joined the Australian Health Practitioner Regulation Agency (AHPRA) as a recognised health profession and, as such, almost all registered paramedics must graduate from accredited university programs; New South Wales Ambulance diploma-qualified paramedics being the exception (16). Currently there is a transition of governance from the Council of Ambulance Authorities (17) to the Paramedicine Accreditation Committee, which operates under AHPRA. This new accreditation committee has drafted standards to regulate future paramedic education. These standards are currently undergoing stakeholder consultation before public consultation in the coming months (18). This transition provides a timely opportunity to systematically analyse existing paramedic courses and their associated learning outcomes to identify the scope of MH education in order to recommend potential changes for future course development.

Learning outcomes are used to objectively define university curricula. Learning outcomes enable the educational processes to take place by outlining a curriculum's aims, resulting in students obtaining theoretical knowledge, skills and abilities to meet at a prescribed level of competence (usually novice/beginner level) (19). Previous research has established that paramedics feel inadequately trained to manage MH patients (6). This problem may stem from a deficiency in education,

potentially beginning in the formative years during tertiary paramedic education (6). These deficiencies include not only a lack of quality education on paramedics managing MH patients, that includes specific reference to the unique work that paramedics do and the unique powers that they have under MH law, but also a lack of frequency, repetitiveness and integration of this knowledge. Pedagogical literature suggests sequencing and scaffolding complex topics such as the management of MH patients throughout curricula is best practice (20) because it allows students an opportunity to consolidate their learning and recognise that patients are often unwell with comorbidities not just independent problems. A curricula that is both horizontally and vertically integrated with sequencing and scaffolding allows educational opportunities for students to take place at multiple times throughout the course of their degree and in so doing exposes them to multiple opportunities to clarify concepts, consolidate understanding and apply it in a range of different scenarios.

We used a scoping review methodology to analyse the extent of MH education within 10 accredited Bachelor of Paramedic (or equivalent) degrees. The aim of this research was to identify how MH education is included in paramedic curricula, thus providing a better understanding of the gap that may exist in paramedic education. We found that currently the education of paramedics with regards to the MH management of patients is limited and does not appear to be well integrated.

## Methods

The purpose of a scoping review is to identify the key concepts underpinning an area of research which has not been reviewed comprehensively before (21). The framework of a scoping review is underpinned by a five-stage process outlined by Arksey and O'Malley (21) which includes: identifying the initial research questions; identifying relevant studies; study selection; data charting and collation; and summarise and report findings.

The focus of this review was to explore the scope of paramedic MH education within Australian universities. The following research questions were developed to guide the search:

1. What is the frequency of nomenclature used within university learning outcomes to describe mental health education?
2. Is the frequency of nomenclature consistent across various universities?
3. Does mental health nomenclature appear across a variety of subjects in the curriculum?

To be as comprehensive as possible, several different sources including electronic databases, reference lists and university learning outcomes were examined (21). The review was undertaken using the EbscoHost (health), Ovid Medline, Cumulative Index to Nursing and Allied Health Literature (CINAHL) electronic databases. Arksey and O'Malley

recommend that a wide range of search terms be adopted to represent a 'broad coverage' of the available literature. Key search terms, derived from MH literature, were developed to capture the literature that related to paramedic MH education (21). These terms would form the foundation of the thematic analysis.

The primary search term 'mental health OR mental illness' was combined using the AND operator with secondary search terms pre-hospital OR paramedic and education OR training. Additional inclusion search criteria included full text, non-duplicate, peer-reviewed journals between 2004 and 2019 and exclusion criteria was applied based on title, abstract and article relevance (Table 1). In addition, the complete syllabi for 10 accredited paramedic courses was compiled for analysis including: Central Queensland University, Charles Sturt University, Edith Cowan University, Flinders University, Griffith University, Monash University, Queensland University of Technology, University of Southern Queensland, Victoria University and Western Sydney University. These institutions were selected because their learning outcomes were available online for public viewing.

Table 1. Inclusion and exclusion criteria

Criteria	Inclusion	Exclusion
Time period	2004-2019	Studies outside of these dates
Language	English	Non-English articles
Type of article	Original research published in a peer reviewed journal	Articles that were not original research or published in a peer reviewed journal
Study focus	Articles incorporating mental health or paramedic mental health education	All other articles
Literature focus	Articles with overwhelming themes of mental health and paramedic mental health education	Articles that made passing reference to mental health and paramedic mental health education

The searches resulted in 43, 43 and five articles respectively. Initial exclusion criteria was applied based on title, abstract

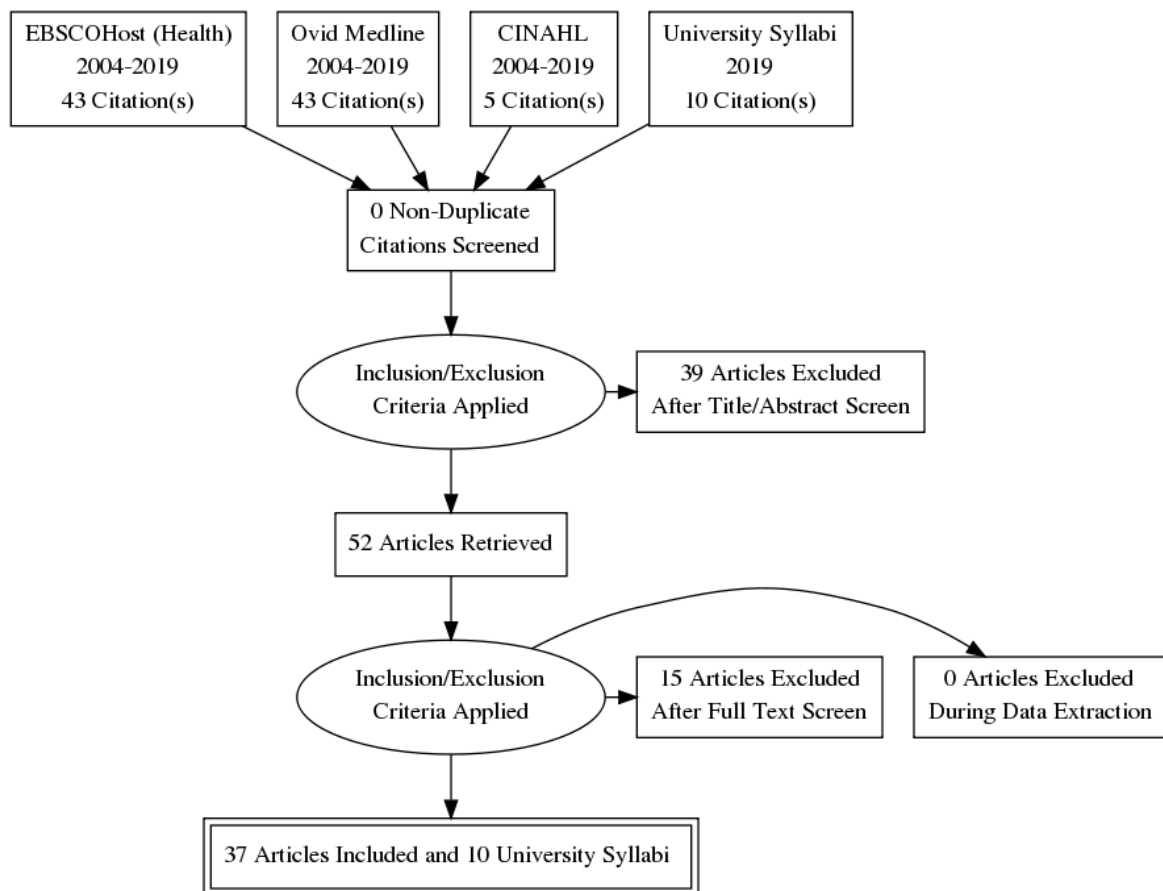


Figure 1. Prisma flow chart

and article relevance leaving a total 52 articles. After applying additional exclusion criteria (Table 1), 37 articles were chosen, including university syllabi and articles found in backward searches (Figure 1).

The fourth stage of Arksey and O'Malley's scoping review framework is the charting and collation of data. Information from the selected literature was reviewed to identify fundamental MH nomenclature (21). The identified nomenclature comprises of key words that appeared consistently across all reviewed literature. Based on these key search terms, the following nomenclature was used for thematic analysis: mental health, mental illness, mental disorder, emotional, psychological, social, psychosocial, behavioural, mental state assessment/mental state examination/mental status assessment, communication/communicate, de-escalation/de-escalate, mental health act, self-harm, substance abuse/affected, suicide/suicidal, resilience and empathy. Using this nomenclature as key search terms, the learning outcomes of the 10 universities was examined. The fifth and final stage of Arksey and O'Malley's scoping review framework involves summarising and reporting findings (21).

### Findings

The scoping review yielded 37 articles and 10 university syllabi. The findings to the three research questions are presented below.

#### Findings 1

What is the frequency of nomenclature used within university learning outcomes to describe MH education?

There is considerable discrepancy used within university learning outcomes to describe MH education. The term with the highest frequency was 'mental health' which appeared 64 times across the 10 different syllabi. In descending order, the nomenclature; behavioural (16), psychological (12), mental illness (11) and psychosocial (10) are the most frequent. The majority of MH nomenclature is scarcely represented across university syllabi with words including de-escalate/ de-escalation (3), mental disorder (2), mental health act (2), substance abuse (2), mental status assessment (1), mental state examination (1), self-harm (1), empathy (1), suicidal (1) and suicide (0).

#### Findings 2

Is the frequency of nomenclature consistent across various universities?

The frequency of nomenclature used across the 10 university learning outcomes is diverse. There is a relatively equal distribution of the term 'mental health', however all other 19 terms are unequally distributed. The nomenclature 'psychological' appears across six universities, followed by behavioural (5), psychosocial and mental illness (4) and emotional (3). The following terms are only used by two or less universities: de-escalate/de-escalation, empathy, mental disorder, mental health act, mental status assessment, mental state examination,

psychology, resilience, self-harm, substance abuse, suicidal/ suicide.

#### Findings 3

Does mental health nomenclature appear across a variety of subjects in the curriculum?

There is significant discrepancy between the frequency of MH nomenclature across tertiary subjects. On average there are 24 subjects in a Bachelor's degree program. Victoria University has the highest spread of MH terms, which appear in six different subjects or one-quarter of subjects in the degree. Following this, Monash University and Queensland University of Technology have MH nomenclature appearing in four subjects. Griffith University and the University of Southern Queensland have MH nomenclature appearing across three subjects. Lastly, all MH nomenclature for Central Queensland University, Charles Sturt University and Edith Cowan University appear in only one subject.

## Discussion

This study sought to identify how MH education is delivered within Australian universities and to address the knowledge gap which contributes to paramedics feeling inadequately trained to assess, manage and treat MH patients.

#### Nomenclature in mental health curricula

The first aim in this study was to identify the frequency of nomenclature used within the university learning outcomes that relate to paramedic MH education. The lack of depth used within learning outcomes to describe MH is striking when examined closely. In this study, the term 'suicide' was absent, 'suicidal' and 'self-harm' only appeared once, with 'de-escalation' and its derivative appearing three times. This finding is notable when viewed within the context of Australian MH crisis research, where suicide is known to be the leading cause of death for men under the age of 44 years (22). More than 3000 people commit suicide in Australia every year, with an increasing number of men engaging in self harm (22). Emergent evidence cites a lack of comprehensive training and difficulties recognising specific conditions as factors which prevent paramedics from engaging in 'best practice' communication and treatment strategies (22). This research into MH education conducted by accredited universities in Australia suggests that students are not being properly equipped to handle these cases, as only a fraction of examined institutions have even mentioned these severe pathologies.

The Mental State Examination (MSE) and its derivatives were only described in two out of a possible 240 subjects within the examined universities. MSE is the first line, fundamental prehospital tool in assessing a patient's current psychological status (23). Due to the transient nature of acute MH presentations, it is imperative to correctly document a patient's psychological state for downstream health professionals (14).

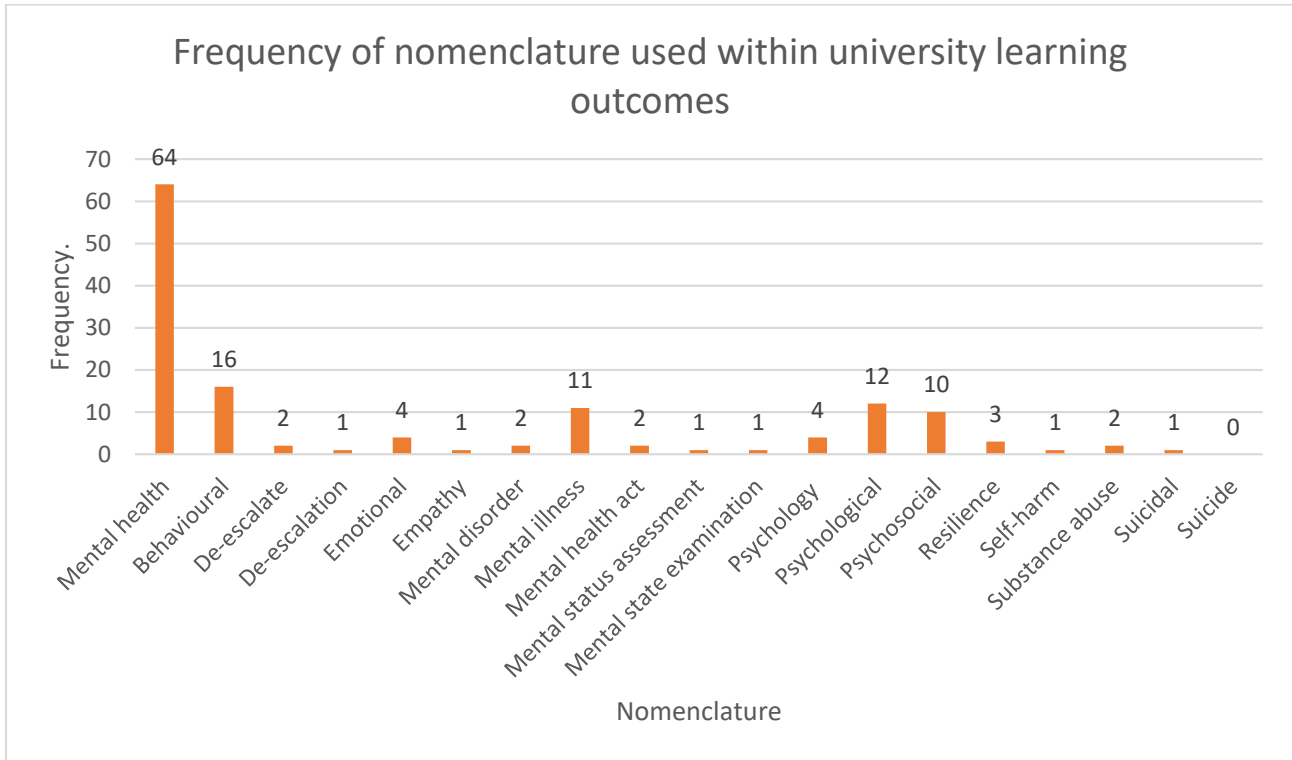


Figure 2. Frequency of nomenclature used within university learning outcomes

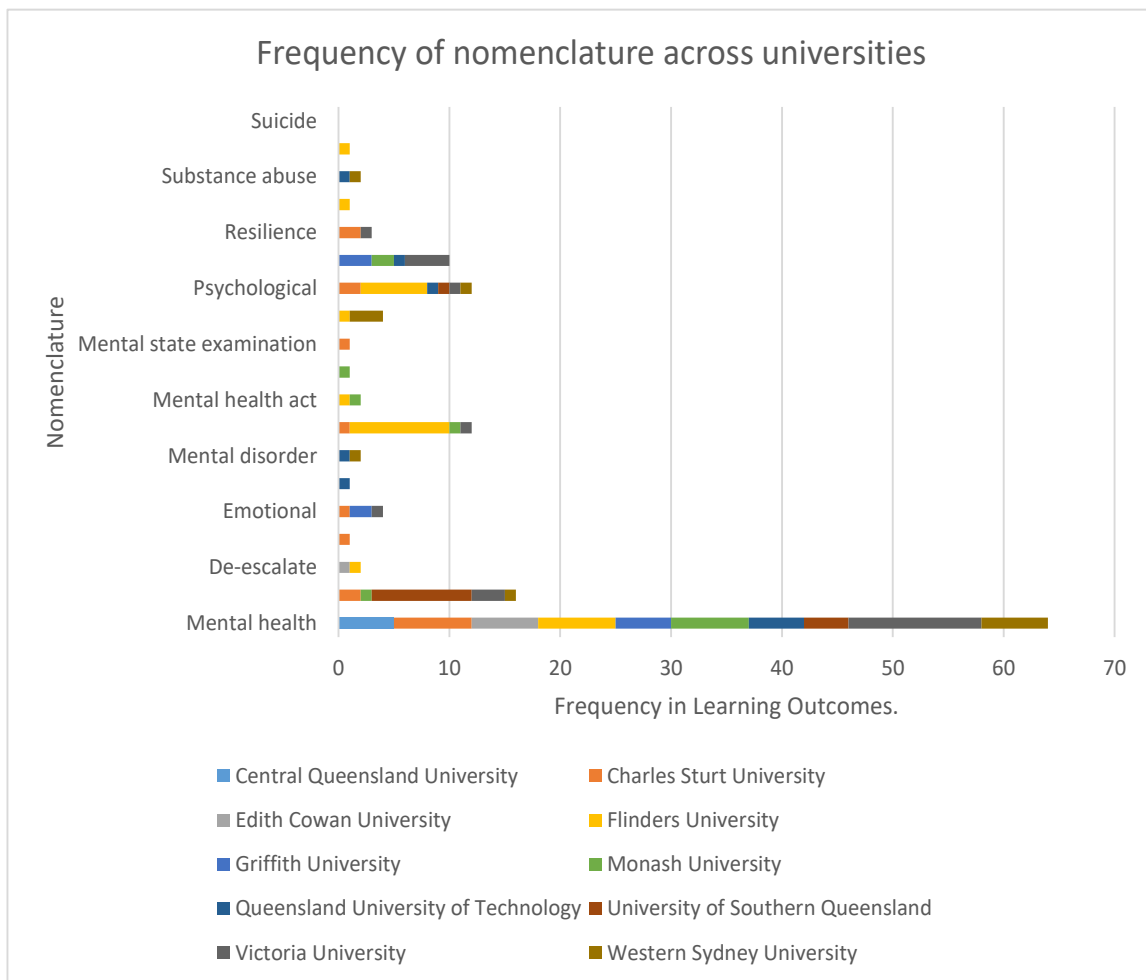


Figure 3. Frequency of nomenclature across universities

MSE has a 95% specificity in identifying impaired individuals, and 98% of physicians rate the MSE as a valid and useful tool within the pre-hospital setting (24). Despite this, only 5.7% of qualified paramedics in one study indicated knowledge of MSE protocol (14). With only two universities referencing MSE within learning outcomes, there is a potential to significantly improve paramedic education within this domain to enhance the assessment and treatment pathways for MH patients.

Additionally, not only is the lack of reference to the use of the mental status assessment or mental status examination tool a concern for paramedic education in the use of these commonly relied upon instruments, but there is also a lack of reference to each state's respective MH act. Mental health law is largely prescriptive and makes special provisions, enabling distinctive powers for paramedics to treat patients in a way that other health practitioners cannot (8), yet the term is only mentioned twice – once at Flinders University and once at Monash University. This is despite the fact that in New South Wales for example, the Mental Health Act 2007 s81 makes specific provision for paramedic powers including search powers and sedation which can have serious clinical implications for paramedics and social implications for patients. It is possible that the reason for this is because students undertake a specific paramedic law and ethics subject in which MH law is taught. However, if this is the case then it provides further evidence of the lack of integration of paramedic curricula and raises a concern that important information required for fuller and a more complete understanding and application of legally and ethically,

as well as clinically competent patient interventions is being missed because subjects continue to be siloed.

### Nomenclature consistency

The second aim of the study was to determine if nomenclature and frequency of terms was consistent across various Australian universities. Currently in Australia institutions that deliver accredited courses in paramedic practice do so under oversight by the Paramedicine Accreditation Committee. Institutions must develop their courses to match accreditation guidelines set by this regulatory body and as such, set learning outcomes exist to meet pre-defined skill sets. Our examination of MH language descriptors used within the learning outcomes of these courses revealed a lack of consistency between various universities. There is a direct relationship between university curriculum content and learning objectives (20). The content from Australian paramedic curriculum flows directly from its learning outcomes. Clearly defined learning outcomes are a validated measurement tool used to gauge institutional delivery, student knowledge and alignment of expectations from employers and policy makers (25,26). A lack of consistency in learning outcomes between various institutions raises questions to the parity of education students receive from competing universities.

This visible discrepancy of content is only evident in the precise language used to describe learning outcomes. Our findings show that the overall course structure of paramedic degrees is

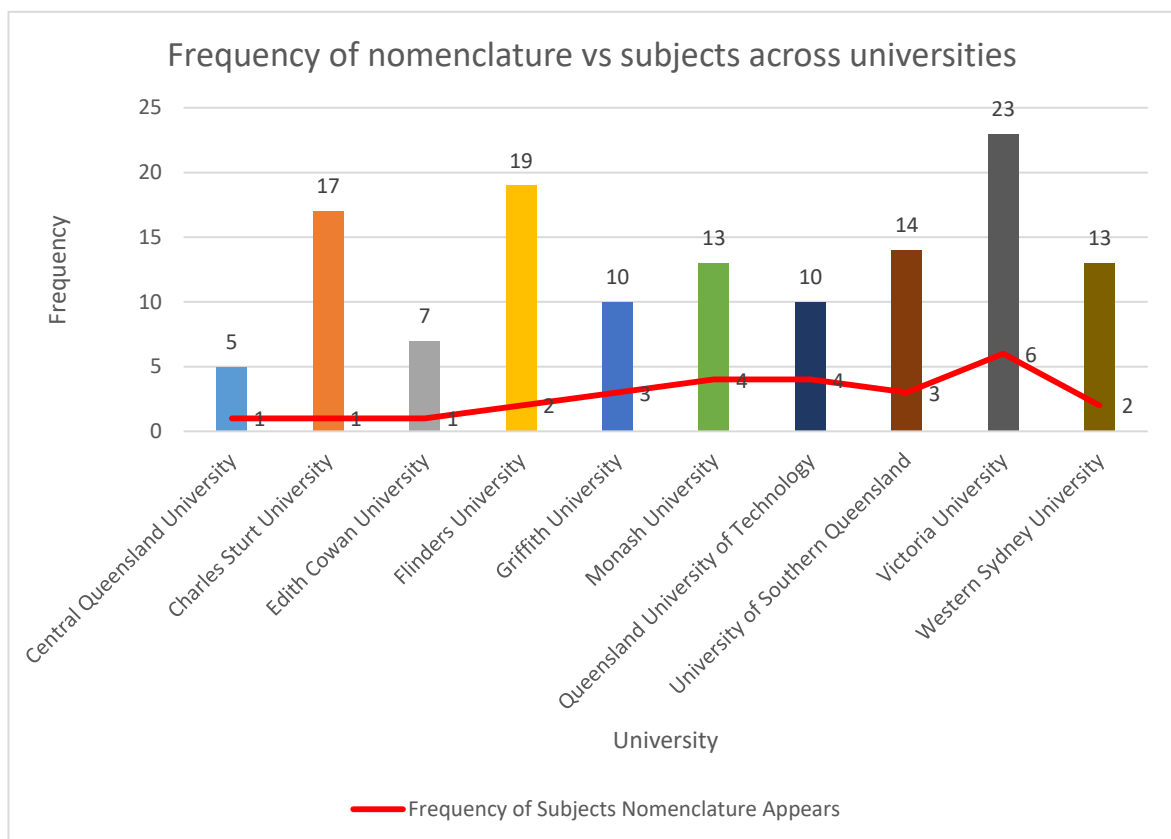


Figure 4. Frequency of nomenclature vs subjects across universities

overwhelmingly similar, as to be expected from organisations that formally had oversight from the Council of Ambulance Authorities. Such findings suggest that while the precise language used to describe subjects between various courses can fluctuate, the overall content remains the same. The problem is that the objective descriptors pertaining to the quantity of teaching MH management is low and inconsistent across curricula. This is despite the fact that rates of MH are broadly distributed across the population, and that the language used in MH management is fairly consistent across healthcare disciplines. That is, the MH patient experience is similar everywhere, but the preparedness for the management of these patients by paramedics differs across paramedic programs.

The present shift in clinical governance from the Council of Ambulance Authorities to the Paramedicine Accreditation Committee has created an opportunity to develop an evidence-based approach to developing new accreditation standards for paramedic education. The findings of this study suggest an inconsistency of MH nomenclature exists between universities, the resultant outcomes can lead to a disparity between graduate paramedic skillsets. This phenomenon may be ameliorated by developing consistency of learning outcomes as an accreditation standard under the Paramedicine Accreditation Committee or a graduate attribute framework that would apply to all paramedic graduates.

### **Nomenclature across curriculum**

The final aim of this study was to determine whether MH nomenclature appeared across a variety of university subjects within a university's curriculum. Learning is the process of acquiring new skills from knowledge and repeated experiences (20). To increase the effectiveness of MH education, MH themes must be facilitated in a variety of subjects. Integrated curriculum is an evidence-based approach to education that focusses on the repetitive and progressive integration of topics throughout the course of a study (27). This teaching method has been integrated into modern medical education and presents content throughout interdisciplinary subjects through sequencing and scaffolding to facilitate learning (20). Of the 240 subjects examined within 10 university curricula, MH nomenclature appeared in a mode of one subject and a median of two-point-five subjects. This siloing of information contradicts educational best practice theory. According to an integrated curriculum approach, this is insufficient for students to review and accumulate the knowledge and skills required for competent and proficient MH management (20). By revisiting themes of MH in a variety of subjects, students will have the ability to apply more advanced applications and increase competence, proficiency and expertise. With significant discrepancy of MH nomenclature appearing in university subjects, there is potential to facilitate MH learning in multiple interdisciplinary subjects to improve paramedic competence in managing acute MH presentations.

### **Recommendations**

Paramedics are consistently recognised as the first point-of-contact for patients presenting with acute MH episodes and current evidence suggests that paramedics feel inadequately trained to treat this demographic. The findings from this scoping review suggests that while Australian paramedic graduates are receiving a baseline level of MH education, inconsistencies between institutions, a lack of focus on severe pathologies and assessment tools are not adequately preparing graduate paramedics for job readiness. Additionally, the existence of these discrepancies between paramedic courses creates an unequal minimum standard of education among graduating paramedic students.

Further, educational literature suggests that an integrated curriculum is best-practice in developing competency in modern medical education (20). By revisiting themes of MH management through a variety of subjects, paramedic students will have the ability to apply more advanced applications and increase proficiency and expertise. With the development of paramedicine as a registered profession, the accreditation of approved programs of study is transitioning from the Council of Ambulance Authorities to a Paramedicine Accreditation Committee. Given the importance and fundamental nature of the management of MH patients by paramedics, and the fact that MH does not discriminate between jurisdictions (ie. patients present and should be managed similarly in all states and territories), the authors argue that there is now an opportunity for special consideration to be given by the Paramedic Accreditation Committee or other appropriate body to mandate a consistency in MH management education across all paramedic Bachelor degree curricula.

### **Limitations**

A limitation of this study is that while we were able to access the learning outcomes of MH management subjects from 10 universities, we were only able to access the specific MH subject outlines that provides detailed content of MH education for paramedics in three courses – subject K89 Bachelor of Science (Paramedical Science), Edith Cowan University; Mental Health Conditions in Paramedic Practice 3810MED, Griffith University; NRS246 Emergency Care in Mental Health, Charles Sturt University and, as such, we were only able to examine and analyse the learning outcomes publicly available for Australian Bachelor of Paramedicine programs. Regardless of this limitation, a point that is worth noting is that in the majority of Australian programs the MH subjects do not contain any reference to MH law and the power of paramedics to limit the liberty of patients that paramedics diagnose as having a MH condition requiring treatment – including the potential for sedation and restraint. The importance of this oversight cannot be overstated given that the basis of the use of these liberty-limiting interventions is the paramedics ability to assess the MH status of the patient. The lack of integration of MH education

horizontally and vertically, particularly with regards to the paramedic law and ethics subjects for example, but likely with other clinically relevant subjects and workplace placement subjects, demonstrates the existence of potential area of improvement for paramedic curricula that if remedied may result in a paramedic students feeling better prepared to manage MH patients once they graduate from their programs. Further research into this subject would benefit from mapping the complete syllabi currently taught in every Bachelor of Paramedicine program. This additional layer of investigation may reveal MH education data points not present in this study. Regardless, the infrequent and inconsistent use of distinct MH nomenclature within Australian paramedic learning outcomes is against educational best practice, and this may be contributing to student paramedics feeling inadequately prepared to manage MH patients.

## Conclusion

The literature has identified an increase in MH disease burdens on the pre-hospital sector, and that paramedics feel inadequately trained to treat these patients. Examination of 10 university syllabi within Australia has identified inconsistencies, both on the language used to describe learning outcomes, and the total frequency of terms used within the course. In addition, it was identified that an integrated curriculum was not used, instead the nomenclature was siloed within a limited number of subjects. These deficiencies may be mitigated by utilising best practice from educational theory and integrating MH education into a variety of subjects throughout the paramedic syllabus. This presents an opportunity for the Paramedicine Accreditation Committee to consider the recommendations from this study; that MH education be approached in a more consistent way across all university curricula and thus establish a national standard; and that it be required to be integrated, sequenced and scaffolded across the entire curricula.

## Acknowledgement

This research paper was made possible by mentorship and guidance the Charles Sturt University's Dare to Know Student Research Scholarship. No financial assistance was provided.

## Competing interests

The authors declare no competing interests. Each author of this paper has completed the ICMJE conflict of interest statement.

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