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## Paramedics' Confidence and Perceived Competence When Attending to Varied Patient Presentations: A Mixed-Method Study

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## Paramedics' Confidence and Perceived Competence When Attending to Varied Patient Presentations: A Mixed-Method Study

### Abstract

**Purpose:** Paramedics are routinely called to patients presenting with mental health concerns. Previous literature suggests paramedics find this patient group challenging. However, no study has investigated whether paramedics find mental health presentations (MHP) more challenging relative to other patient presentations, or whether certain paramedic variables relate to their perceived ability to manage MHP. This study investigates differences in paramedics' perceived ability to attend to MHP compared to other patient presentations, and whether their perceived ability is related to their level of experience or location of work (metropolitan or rural). The study also explores paramedic's experiences and perspectives of MHP. **Method:** Operational paramedics in Australia (n = 138) completed a survey assessing their perceived ability to respond to mental health, cardiac, respiratory, and trauma-related presentations. A repeated measures ANOVA tested differences in perceived ability between these patient presentations. T-tests and Pearson's correlations were conducted to determine whether years of experience or location of work related to their perceived ability for MHP. Nine paramedics were also interviewed, and a thematic analysis conducted to gain insight into paramedic's experiences and perspectives of MHP. **Results:** Paramedics reported a significantly lower perceived ability to respond to MHP relative to each other patient presentation measured. No relationships were found between a paramedic's perceived ability to respond to MHP and their length of work experience or location of work. Interviews with paramedics revealed four superordinate themes: 1) inconsistent conceptualization of their role, 2) feelings of helplessness and frustration, 3) stigmatized views of patients with a mental illness, and 4) inconsistent views of knowledge and learning relating to MHP. **Conclusions:** Paramedics believe they have a significantly poorer ability to respond to MHP relative to other patient presentations. Education and training focused on defining a paramedic's role for MHP as well as reducing stigmatized views of patients with a mental illness may improve paramedic's care of this cohort of patients.

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### Author Bio(s)

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Associate Professor Jade Sheen, SFHEA, MAPS, is a clinical psychologist and research who works as an associate professor at Deakin University and as a Clinical/Health Psychologist and Family Therapist.

Mathew Ling, PhD, is a lecturer for the school of psychology at Deakin University. He also works as a researcher.



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### ABSTRACT

**Purpose:** Paramedics are routinely called to patients presenting with mental health concerns. Previous literature suggests paramedics find this patient group challenging. However, no study has investigated whether paramedics find mental health presentations (MHP) more challenging relative to other patient presentations, or whether certain paramedic variables relate to their perceived ability to manage MHP. This study investigates differences in paramedics' perceived ability to attend to MHP compared to other patient presentations, and whether their perceived ability is related to their level of experience or location of work (metropolitan or rural). The study also explores paramedic's experiences and perspectives of MHP. **Method:** Operational paramedics in Australia (n = 138) completed a survey assessing their perceived ability to respond to mental health, cardiac, respiratory, and trauma-related presentations. A repeated measures ANOVA tested differences in perceived ability between these patient presentations. T-tests and Pearson's correlations were conducted to determine whether years of experience or location of work related to their perceived ability for MHP. Nine paramedics were also interviewed, and a thematic analysis conducted to gain insight into paramedic's experiences and perspectives of MHP. **Results:** Paramedics reported a significantly lower perceived ability to respond to MHP relative to each other patient presentation measured. No relationships were found between a paramedic's perceived ability to respond to MHP and their length of work experience or location of work. Interviews with paramedics revealed four superordinate themes: 1) inconsistent conceptualization of their role, 2) feelings of helplessness and frustration, 3) stigmatized views of patients with a mental illness, and 4) inconsistent views of knowledge and learning relating to MHP. **Conclusions:** Paramedics believe they have a significantly poorer ability to respond to MHP relative to other patient presentations. Education and training focused on defining a paramedic's role for MHP as well as reducing stigmatized views of patients with a mental illness may improve paramedic's care of this cohort of patients.

**Keywords:** paramedic, mental health, emergency care, mixed-methods, confidence, competence

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## INTRODUCTION

The role of a paramedic is to provide rapid emergency medical assessment and treatment in the pre-hospital environment.<sup>1</sup> Whilst this is often perceived as relating to the care of acute medical and traumatic emergencies, paramedics are also routinely called to patients with mental health concerns.<sup>2,3</sup> In Australia, one estimate showed approximately 10% of calls for ambulances in the state of Victoria were for mental health presentations (MHP).<sup>4</sup> Additional literature across Australia shows patients with mental health complaints make up a significant proportion of calls to ambulance services.<sup>5,6</sup> Paramedics can often be the first point of contact for patients presenting with a mental health concern, and if patients perceive these interactions to be negative, this may decrease the likelihood that these patients accept or seek help in the future.<sup>7,8</sup> Therefore, it is vital that paramedics receive education and training that provides them with adequate knowledge and skills to provide high quality care to this cohort of patients.

Literature suggests the current level of training and education for paramedics regarding MHP is insufficient. An investigation by Shaban into paramedic interactions with MHP suggested the need for more education and training due to a lack of suitable, structured, and validated tools for paramedics to use when attending to MHP in the pre-hospital setting.<sup>9</sup> A review by the Victorian Auditor-General's office also investigated mental health crises in the community and recommended more mental health training for the ambulance service.<sup>10</sup> Further, a review of Australian university curriculum of mental health education found inconsistencies between universities, with the authors summarizing this gap as leaving many graduate paramedics inadequately prepared to manage MHP.<sup>11</sup> Of concern, a recent review of the literature surrounding Australian paramedics' management of MHP also stated the need for further training and education, specifically around non-technical skills and interagency collaboration to improve paramedic care of MHP.<sup>12</sup> Despite improvements being suggested for years, this gap in paramedics' education and training appears yet to be effectively addressed.

Specific challenges present themselves to paramedics when they are called to a patient with a mental illness. Paramedics have been found to lack appropriate clinical decision-making during interactions with MHP, sometimes resulting in the use of intuition or a "gut feeling" rather than defaulting to appropriate decision-making frameworks as is standard practice for paramedics.<sup>13,14</sup> Other research has shown paramedics demonstrate a poorer ability to recognize symptoms of depression or psychosis when comorbid with alcohol or drug intoxication.<sup>15</sup> Additional challenges may also impact patients directly, with some paramedics exhibiting stigmatized views of patients presenting with a mental illness which may be why some patients have reported poor experiences with the care provided by paramedics.<sup>16-18</sup>

Research has investigated the adequacy of education and training directly with paramedics. Roberts et al surveyed 72 paramedics, reporting 59% of their sample responded "rarely" or "sometimes" to the question, "Do you feel adequately trained to deal with mental health emergencies?"<sup>19</sup> Similarly, Shaban interviewed six paramedics revealing a common theme of the need for greater training and education relating to MHP; however, the sample size in this study does limit its generalizability.<sup>13</sup> This initial evidence suggests there may be a need for further investigation into training and education for paramedics regarding MHP.

The confidence of healthcare workers is an important factor as it can affect their clinical decision making.<sup>20</sup> Two studies have investigated paramedics' confidence surrounding MHP, showing paramedics report low confidence when attending to this patient group. First, in a sample of 159 South Africa paramedics, Mothibi et al found 87% responded "no" to the question, "Do you feel confident with your level of knowledge regarding pre-hospital management of psychiatric emergencies?"<sup>21</sup> Similarly, Clegg found in a sample of 26 paramedics from the state of Tasmania in Australia 42% disagreed and 27% were unsure in response to the item, "I feel confident when attending these patients."<sup>16</sup> Although this does suggest low confidence, the items differ slightly in what they measure. Clegg reports on the general confidence of paramedics managing MHP, whereas Mothibi et al suggests this low confidence may result from paramedics perceiving they have insufficient knowledge of this patient group.<sup>16,21</sup> While this preliminary data is worth noting as it demonstrates there may be similar concerns across different countries with different prehospital networks, there is not yet a clear understanding of why paramedics may demonstrate low confidence towards MHP.

Paramedics have also reported a belief that managing MHP is not within their skill set. The review of paramedic management of MHP by Emond et al noted paramedics do not fully value managing MHP as part of their practice, with the authors stating there may be a "perception that managing mental health presentations is outside their scope of practice."<sup>12</sup> Similarly, in the qualitative findings by Clegg, paramedics described a general feeling of being unable to help patients presenting with mental health concerns.<sup>16</sup> This is possibly due to paramedics perceiving their role primarily as one of transport for MHP, rather than providing treatment.<sup>19</sup>

Collectively, this evidence suggests paramedics do not feel confident in their ability to manage MHP. However, the data discussed above is preliminary in some forms. First, the suggestion that paramedics have a low perceived ability towards managing MHP is based on descriptive data from responses to some items from a small number of surveys. Second, limited research exists into paramedic's perceived ability around MHP relative to other patient presentations. To date, only Clegg has

provided a brief comparison, reporting 62% of paramedics (N=42) feel more confident when attending a patient with chest pain compared to a patient presenting as suicidal or psychotic.<sup>16</sup> However, the small sample size and the narrow nature of this data means the scope of this finding is limited. Finally, limited qualitative data exists on paramedics' experiences and perspective relating to MHP, and as such, additional exploration, such as thematic analysis, is needed to understand this complex issue further.

### The Present Study

The present study aims to fill gaps in the literature using a mixed methods structure to compare paramedics' perceived ability to respond to MHP relative to other patient presentations, as well as exploring possible explanations for any differences. The mixed methods approach will enable triangulation and expansion of the data sets.<sup>22</sup> Triangulation will be observed via analysis of the quantitative and qualitative data sets, with the qualitative data also being used to expand upon the findings from the quantitative results.

The first part of the study will collect quantitative data through surveys completed by paramedics. Within the literature, three themes were evident when paramedics were assessed on their perceived ability to respond to MHP: 1) perceived knowledge of conditions, 2) perceived ability to provide care that benefits the patient, and 3) general confidence when attending to MHP. However, paramedics also attend to a range of traumatic and medical conditions, such as patients presenting with cardiac pathologies, respiratory pathologies, or suffering traumatic injuries.<sup>23</sup> Therefore, the survey will assess paramedics' perceived ability to respond to various patient presentations, thus aiming to determine whether their perceived ability to respond to MHP is significantly different compared to other patient presentations. Research is also yet to investigate whether other variables relating to paramedics, such as their level of experience or their location of work (metropolitan or rural), are related to their perceived ability to respond to MHP. Data on these variables will also be collected in the survey allowing the study to examine whether there is a relationship between these variables and a paramedics' perceived ability to manage MHP.

The second part of the study will obtain qualitative data through interviews with paramedics discussing their experiences and perspectives relating to MHP. Therefore, the third and final aim of the study will be to provide a greater understanding into paramedics' perceived ability to respond to MHP through reflexive thematic analysis of the qualitative data.

Based on previous literature, this study hypothesizes paramedics will report a lower perceived ability to respond to MHP compared to other medical and trauma presentations. To our knowledge, no other studies have explored the relationship between a paramedic's number of years of experience or their location of work with their perceived ability to respond to MHP; therefore, this aim will be exploratory in nature. Similarly, investigating paramedics perceived ability to respond to MHP will be explored further, so no formal hypothesis has been developed for this aim of the study.

## METHOD

### Participants

Participants were eligible if they were current operational paramedics working in an Australian setting. A total of 173 participants were recruited to complete the survey. Only 138 had sufficiently complete data for analysis. Missing data was filled for cases with single missing values in perceived ability scores only using expectation-maximization in IBM SPSS Statistics (Version 27) predictive analytics software, with all analyses conducted on pairwise complete data. Nine participants were interviewed for the qualitative part of the study. Table 1 presents information relating to each sample.

**Table 1.** Information of Each Sample

	N	Gender (%)	Location (%)	Years Experience Mean (DS)
Quantative Sample	138	Male: 52 (37.7) Female: 86 (62.3)	Metropolitan: 124 (89.9) Rural: 14 (10.1)	8.7 (5.9) (n=135)
Qualitative Sample	9	Male: 4 (44.4) Female: 5 (55.6)	Metropolitan: 8* Rural: 2*	9.8 (6.0)

Note. \*One participant stated they worked in both metropolitan and rural settings

### Procedure

The Deakin University Human Ethics Advisory Group provided ethics approval for this study (HEAG-H 20\_2021). Two methods were used for recruitment: 1) advertisements on Facebook groups consisting of members that are operational paramedics providing a link directly to the online survey and asking interested participants to contact the first author (NW) for an interview, and 2) advertisement through a local ambulance service, consisting of a QR code that took participants directly to the survey. Interviewees were not recruited through the survey, only through an expression of interest. Participants were provided with a plain language statement and consented prior to completing either part of the study. The first author conducted each interview online using the Zoom video conferencing application.<sup>24</sup> Interviews were recorded and transcribed verbatim by NW for data

analysis purposes. Recruitment took place between April and June 2021. Three \$50 movie vouchers were used as incentive for participation and were raffled off at the conclusion of recruitment to three random participants.

### Measures

Demographic information (gender, number of years of experience, location of work) was collected at the beginning of the survey.

#### **Perceived Ability**

A new measure was used to assess a paramedic's perceived ability when attending to various patient presentations. The scale is published here: [osf.io/wdc5h](https://osf.io/wdc5h).<sup>25</sup> The measure of perceived ability consisted of 15 items, 5 items from each of the following three areas: 1) perceived knowledge of conditions, 2) perceived ability to provide care that benefits the patient, and 3) general confidence when attending to a certain patient presentation. Examples of an item from each of the three areas are: "My knowledge of *mental health* patients is comprehensive", "I believe I am able to provide care that helps *cardiac* patients", and "I am very confident when attending a patient presenting with a *respiratory* problem". The same items were asked for each patient presentation, with the italicized words changed to either "mental health", "cardiac", "respiratory" or "trauma" to reflect the four different patient presentations measured. For the complete list of items see Appendix. Items were responded to on a 5-point Likert scale (0 = strongly disagree, 1 = disagree, 2 = neither agree nor disagree, 3 = agree, 4 = strongly agree), with higher scores representing a higher perceived ability.

#### **Qualitative Measures**

Questions were developed for semi-structured interviews based on the three themes from the literature: 1) perceived knowledge of MHP, 2) perceive ability to provide benefit to MHP, and 3) confidence when attending to MHP. Interviews began by asking participants which patient presentations they found challenging. Following this, the interview focused on MHP, asking about their role, level of training and education, and how they generally viewed this patient group. All questions are listed in the Appendix.

### Data Analysis

#### **Quantitative Analysis**

Quantitative data analysis was performed using IBM SPSS Statistics (Version 27) predictive analytics software. To compare paramedics' perceived ability between each patient presentation, the raw scores were converted into percentage of maximum possible (POMP), and a repeated measures analysis of variance (ANOVA) was conducted. To determine whether there was a difference between metropolitan and rural paramedics in their perceived ability to manage MHP, an independent samples t-test was conducted. Finally, Pearson's correlation was run to analyze whether there was a relationship between a paramedics' perceived ability to manage MHP and their number of years of experience.

#### **Qualitative Analysis**

An inductive reflexive thematic analysis was conducted using the six phases of analysis outlined by Braun et al.<sup>26</sup> First, NW read through each transcript twice (phase 1). Next, NW read transcripts again and generated codes from each (phase 2). Then, NW met with the senior investigator (JS) and constructed initial themes from the codes (phase 3). Afterwards, the themes were drafted by NW and were again discussed with JS (phase 4). Next, consensus was reached on the central themes and subthemes in the qualitative data (phase 5) before write-up (phase 6).

#### **Reflexivity**

NW led the data collection and analysis. At the time of this study, he was an operational paramedic employed by an Australian ambulance service and completing a bachelor of psychological science (honors) degree. His perspective on this topic was informed by his experience as a paramedic and his tertiary education to date in psychology. This allowed him to approach the topic from both perspectives; however, a certain lens and assumptions were also brought to the data analysis. As it is impossible to remove all bias and assumptions from qualitative analysis, this was discussed before and during analysis between NW and JS.<sup>26</sup> Additionally, to reduce the impact of these assumptions and biases, the themes were developed in discussions between NW and JS, who is a clinical psychologist and researcher.

## RESULTS

### **Quantitative Results**

A total of 115 participants completed the entire survey. A repeated measures ANOVA was conducted using the data from these 115 participants to determine whether paramedics' perceived ability to respond to MHP differs compared to other patient presentations. Mauchly's test of sphericity indicated the assumption of sphericity was violated,  $\chi^2(5) = 92.779, p < .001$ ; therefore, the Greenhouse-Geisser statistic is reported instead. The analysis revealed a large effect size and a significant difference in the perceived ability of paramedics when attending to different patient presentations, Greenhouse-Geisser = .64,  $F(2, 112) = 141.16, p < .001, \eta^2 = .55$ . The perceived ability relating to each patient presentation is presented in Figure 1 and Table 2. Follow-up comparisons between MHP and each other patient presentations measured (cardiac,

respiratory and trauma) found significant differences,  $p < .001$ . This indicates that paramedics demonstrate a lower perceived ability when attending to MHP compared to cardiac presentations (mean difference =  $-24.09$  [95CI  $-28.17, -20.01$ ]), respiratory presentations (mean difference =  $-17.50$ , [95CI  $-21.26, -13.64$ ]), and trauma presentations (mean difference =  $-18.06$  [95CI  $-22.37, -13.74$ ]).

An independent samples t-test between 124 metropolitan paramedics ( $M = 56.01$ ,  $SD = 13.01$ ) and 14 rural paramedics ( $M = 55.83$ ,  $SD = 11.17$ ) showed no significant difference between their perceived ability to respond to MHP,  $t(136) = .05$ ,  $p = .962$ .

Three participants did not provide their number of years of experience. A Pearson's correlation ( $n = 135$ ) showed a non-significant relationship between a paramedic's number of years of experience and their perceived ability to respond to MHP,  $r(133) = .13$ ,  $p = .146$ .

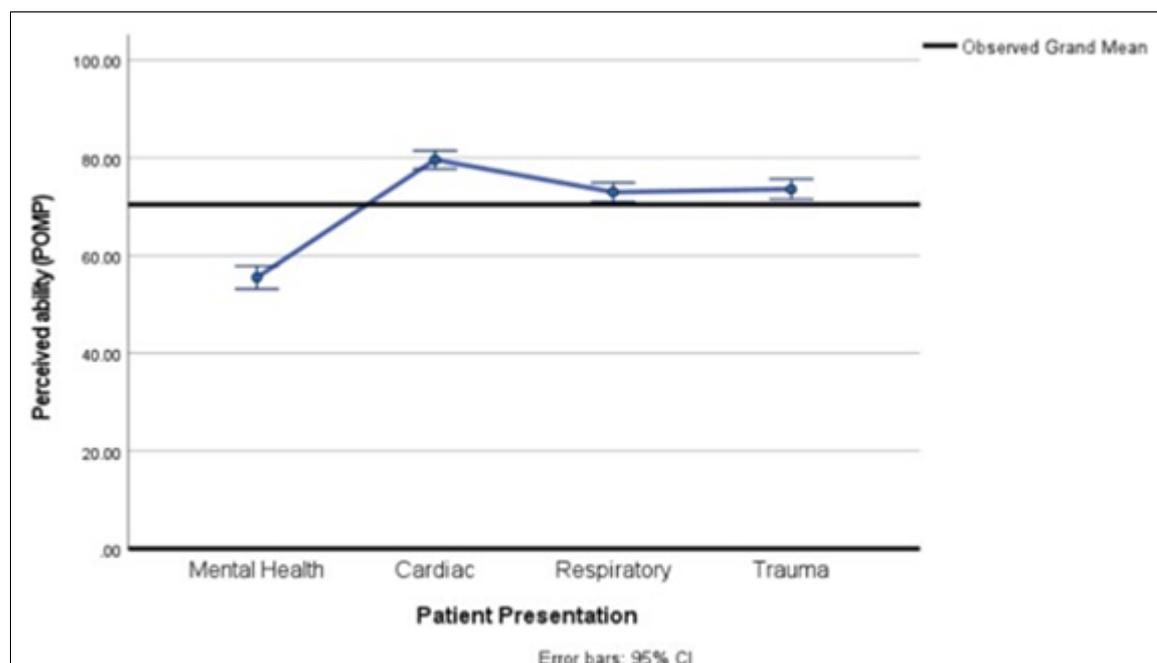


Figure 1. Perceived Ability for Each Patient Presentation.

Table 2. Perceived Ability of Each Patient Presentation

Patient Presentations	Mental Health	Cardiac	Respiratory	Trauma
Mean perceived ability (SD)	55.51 (12.72)	79.59 (10.20)	72.96 (10.52)	73.57 (11.11)

### Qualitative Results

Information relating to each interview participant (gender, location of work, years of experience) is provided in Table 3. In the qualitative analysis, participants are identified after each quote with their participant ID. Four superordinate and six subordinate themes were identified and are listed in Table 4.

Table 3. Interviewee Information

Participant ID	Gender	Location	Number of years of experience
P1	Male	Metropolitan	10
P2	Female	Rural	13
P3	Female	Metropolitan	4
P4	Male	Metropolitan	2
P5	Male	Metropolitan	5
P6	Female	Metropolitan	17
P7	Female	Metropolitan and Rural	20
P8	Male	Metropolitan	10
P9	Female	Metropolitan	7

**Table 4.** Themes from the Qualitative Analysis

Superordinate Themes	Subordinate Themes
Role conceptualization	NA
Feelings of helplessness and frustration	Emotive response to individual role Emotive response to "the system"
Stigma	Stigma in others Stigma in self
Knowledge and learning	Informal learning methods How much knowledge is helpful?

### Role Conceptualization

Paramedics' description of how they viewed their role when attending to MHP varied significantly, with some describing their role in contradictory terms, whereas others were able to delineate their role clearly. Some paramedics conveyed an inconsistent view of their role, articulating when attending to MHP they *"don't think there's a great deal we can do for them"* (P8), and that they *"don't manage these patients"* (P1). However, the same participants who expressed these beliefs also identified several benefits they can provide for this patient group, such as *"the way we talk to people and...the rapport that...we can gain"* (P8). Of note, participant 1 stated he can manage a patient's anxiety with *"pharmacological methods and...with the therapeutic relationship that you can make with a person,"* but still maintained doing this does *"absolutely zero for the mental health condition."* Further, several paramedics, including participant 1, believed that their interaction with MHP can have a lasting impact on the patient's engagement with healthcare workers, stating if their interaction with a paramedic *"is a negative experience...then maybe it's another couple of months before they make that next time to reach out"* (P1).

Other participants provided clearer descriptions of their role, stating it is based around communication and rapport building with patients. When asked why he did not find MHP challenging, participant 5 stated *"I think it's...more about your communication skills and how you can build a rapport with them, and I don't find that generally challenging with mental health patients"*.

This was echoed by participant 4, who articulated a clear communication strategy with MHP: *"just empathize and reflect a lot of the time...I always try and focus on creating that sense of optimism, pointing out that this is about getting the ball rolling, and...just bringing them on board with that process. And getting them to be optimistic, because it means they're more likely to invest and stick with whatever therapy they're getting"* (P4).

Participants who focused on communication with MHP appeared to be able to delineate their role more clearly and have a better understanding of their goals when attending to MHP.

### Feelings of Helplessness and Frustration

Many participants expressed feelings of helplessness and frustration when discussing patients with a mental illness. These emotive responses related both to their individual role with MHP and how they viewed the broader resources that exist for these patients.

#### Emotive Response to Individual Role

Some paramedics expressed feelings of helplessness and frustration when discussing their interactions with MHP. First, many participants believed their care did not benefit patients with a mental illness, revealing a sense of helplessness: *"I think that the more you know that it's not a short-term fix, so thinking that you have the ability in prehospital to do much about that is...I guess, I don't think we have a...huge amount we can do in the limited time frames that I see these people"* (P1).

Second, frustration was expressed by participant 3 as she was unsure how to interact effectively with patients with assumed borderline personality disorder: *"So it kind of feels like it's more a frustrating, sort of, time consuming conversation that really has no purpose"*. Similarly, participant 9 described her feelings when she believes she has not been able to provide the best care for her patient due to the constraints in her role: *"You're left with a...really bad taste in your mouth and a really bad feeling in your heart that you haven't helped anyone"*.

#### Emotive Response to "The System"

Some paramedics also articulated frustration towards how they viewed the broader resources that exist for patients with a mental illness. *"It's the more you know, the more frustrated you are by the system"* (P9). Some directed this frustration towards emergency departments, expressing a desire not to transport MHP to emergency departments, *"and so it's to hospital. But you know in your heart that's not the best management for that patient"* (P9). Similarly, participant 4 described beliefs that transport to emergency departments can be futile and possibly have negative consequences, *"because everybody knows that*

*they're probably just going to leave..., which changes their relationship with healthcare and can often make them more pessimistic.*" Other participants appeared frustrated by the perceived lack of resources outside of the hospital setting. *"If you ring the doctors...and you ask for an appointment, you're going to be given an appointment six weeks away"* (P7). Participant 2 seemed to feel a general sense of helplessness surrounding "the system," stating *"it doesn't support the patient, it doesn't support us. And I just find we're back in that cycle"*.

### **Stigma**

The stigmatization of patients with a mental illness was evident throughout the interviews, either by expressing beliefs that it exists among their colleagues, or to some extent, in their own comments.

#### **Stigma in Others**

Some participants expressed a belief that other paramedics have stigmatized views of patients with a mental illness, stating they thought other paramedics weren't *"invested as much in mental health patients as much as they are...medically unwell people"* (P3), or that they *"don't think it's [MHP] many people's favorite"* (P8). Others theorized reasons why paramedics may demonstrate stigmatized views. Participant 2 reasoned due to a lack of life experience, she thinks some paramedics have *"got an automatic judgment and bias on individuals.... you can see them turn their nose up the minute they walk into those doors."* Participant 5 believed a link exists between the resources needed for MHP and healthcare worker's perception of this patient group, *"paramedics or nurses having that negative perception of mental health patients...they're the ones we need security for."*

#### **Stigma in Self**

Some participants interviewed expressed potentially stigmatizing views towards patients with a mental illness. Multiple paramedics questioned the legitimacy of patient's mental illnesses if they presented with behavioural symptoms: *"A lot of the time we refer to people with behavioural issues as a mental health patient and they're certainly not a mental health patient"* (P2); *"just anything that is slightly behavioural...is referred to as a psych patient and [yet,] so many of them aren't even remotely"* (P1). Although participants did not define what they considered "behavioural," if a patient was judged to be "behavioural," some expressed reluctance to help these patients: *"People with behavioral issues...we're not so keen on helping them."* (P8). This was further illustrated by participant 1 describing that the *"true mental health patients...are the ones that you would like to be able to help more"*.

### **Knowledge and Learning**

Regarding paramedics learning and knowledge of MHP, many appeared to rely heavily on informal methods of learning. There were also differing opinions relating to the usefulness of knowledge.

#### **Informal Learning Methods**

Some paramedics cited the importance of personal life experiences helping to develop their knowledge of mental illness, such as participant 1 reflecting on people in his life experiencing mental health problems as giving him a *"better understanding of the all-encompassing effects that...severe mental health can have."* Similarly, participant 2 believed growing up where mental illness was common helped her to interact with this group of patients: *"I've always found it personally quite easy to start that communication and perhaps that was by way of upbringing"*. Conversely, participant 7 felt unprepared to interact with patients with a mental illness as she *"wasn't necessarily exposed to it [mental illness]"* prior to becoming a paramedic.

Some paramedics described the importance of learning through observation and personal experience on the job: *"You work with people, you see people who do it well, you see people who don't...for me that's the mode of education that's invaluable"* (P4). Likewise, participant 6 stated learning to interact with MHP *"probably comes with experience."* Interestingly, she went on to express uncertainty around these interactions: *"Over 17 years, I do just what feels right. But probably no one's ever told me what to do...and no one's ever told me if I'm doing it right, either."*

#### **How Much Knowledge is Helpful?**

Paramedics expressed different views on whether they wanted more knowledge relating to MHP. Some articulated a desire for more knowledge, with participant 5 describing his knowledge of MHP as *"superficial"*, and participant 7 explaining why she wants more knowledge in this area, *"I would like to have a greater understanding, but I don't sometimes understand how mental health workers, the specialists in this field, make their decisions when they are quite different to mine"*.

Other paramedics doubted whether additional knowledge would be helpful in their role: *"Our treatment for mental health is so broad, and so minimal a lot of the time, that the amount of knowledge you need to distinguish between 'I'm noticing schizotypal traits, this person is clearly delusional' versus 'this person is having hallucinations'...all of this sort of stuff...it doesn't change our treatment that much"* (P4).

Additionally, for some, experience was seen to be a barrier to learning, as stated by participant 6 when discussing learning new communication skills: *"I don't know that you can teach it either. Those same people probably interact with everybody in that manner, and they've got 30, 40, 50 years of conditioning in communication in a certain way"*.

## DISCUSSION

The present study shows paramedics' perceived ability to respond to MHP is significantly lower relative to other patient presentations. Further, qualitative data explored paramedics' experiences and perspective of MHP, revealing possible explanations of these findings. These included an inconsistent conceptualization of their role, feelings of helplessness and frustration, stigmatizing views of patients with a mental illness, and inconsistent views of knowledge and learning relating to MHP. The study also revealed no relationship between a paramedic's location of work (metropolitan or rural) or their level of experience with their perceived ability to manage MHP.

Currently, research suggests paramedics find MHP challenging.<sup>13,16,21</sup> This study extends on these findings in the literature by demonstrating that the challenging nature of MHP for paramedics appears specific to this patient cohort. In addition, as our data showed no relationship between a paramedic's location of work or years of experience and their perceived ability to respond to MHP, this indicates that poor perceived ability towards MHP is consistent among paramedics, and not related to specific groups within the workforce.

Paramedics have reported differing opinions in how they view their role when attending to MHP.<sup>19</sup> Similarly, our qualitative data also showed paramedics were inconsistent in how they conceptualized their role for patients with a mental illness. This may provide some understanding of the lower perceived ability found in our quantitative data. Although almost all paramedics interviewed stated that communicating in a way that facilitated rapport and reassurance was helpful when interacting with patients with a mental illness, multiple paramedics still maintained a belief that they cannot help this patient group. As there were items within the survey relating to providing benefit to a patient's condition, if a paramedic holds this belief, he or she may have scored low on these specific items, which may be an example of the quantitative and qualitative data converging.

It could be theorized that paramedics who feel they are unable to provide assistance to MHP may also develop negative emotional responses to this patient group, such as helplessness and frustration, which also emerged as a theme from our qualitative data. These findings are consistent with other research where paramedics reported feeling frustration and anxiety in relation to MHP.<sup>16</sup> Interestingly, Clegg also found paramedics conceptualized their role generally as being "fixers" and appeared to develop frustration at their inability to "fix" patients presenting with a mental illness.<sup>16</sup> It is possible, then, that our themes of helplessness and frustration and inconsistent role conceptualization may be linked as paramedics who conceptualize their role as ineffective with MHP may develop these negative emotional responses.

Stigmatized views of patients with a mental illness were also evident within the data, which is consistent with other literature.<sup>15,17,18</sup> Generally, paramedics work in an uncontrolled environment and, as such, have reported a strong concern towards the potential for violent behavior.<sup>15</sup> As recent data has shown police are five times more likely to attend to MHP compared to other prehospital patient presentations, it could be argued that paramedics develop a perception of MHP as being more of a safety concern, thus informing potential stigma.<sup>4</sup> This hypothesis is supported in part by Clegg who found paramedics have reported feeling fearful of this patient group.<sup>16</sup> Further, other research shows paramedic students report the lowest levels of empathy among multiple healthcare students.<sup>27</sup> It could also be hypothesized this combination of low empathy and perceptions of MHP being dangerous may also lead to stigmatized views. As education can reduce stigma towards people with a mental illness, this could be an important factor to include in future education and training.<sup>28</sup>

Not all data from this study concurred. The quantitative analysis between a paramedics' number of years of experience and their perceived ability to manage MHP showed no relationship. However, within the qualitative data, multiple paramedics cited the importance of experience in the development of their ability to attend to MHP. This inconsistency can be interpreted in multiple ways. First, paramedics may become more comfortable with the uncertainty of interactions with MHP, but not necessarily think they provide better care after years of experience. Therefore, paramedics may maintain a belief throughout their career that their ability to attend to MHP is poor, as reflected in consistent low perceived ability scores for MHP across the sample. Alternatively, paramedics may actually improve in their ability to respond to MHP with experience. If viewed through the lens of the "Dunning-Kruger effect," that individuals with high levels of competence may underestimate their ability, paramedics who acquire improved competence with experience may still underestimate their ability.<sup>29</sup> Ultimately though, these results require further investigation.

## Limitations

Limitations of this study should be noted. First, the scale used to measure perceived ability needs to be considered. The items were created based on themes found in past literature measuring a paramedic's perceived ability to respond to MHP which contributes to the scale's face validity. Further, themes that emerged from the qualitative data provides some indirect convergent validity. However, the absence a reliability analysis suggests that the results should be interpreted with caution. In addition, due to the type of analysis performed, the perceived ability of paramedics for MHP can only be interpreted

relative to the other patient presentations measured. Second, while the study aimed to recruit paramedics in an Australian setting, due to the recruitment methods used, it is likely most participants were from the state of Victoria, limiting the study's generalizability.

## CONCLUSION

This is the first study to reveal that paramedics perceive their ability to respond to MHP as significantly poorer compared to other patient presentations. In the context of other research that recommends the need for more training and education for paramedics relating to MHP, the results of this study further emphasize this requirement.<sup>12,21,30</sup> This study was also able to provide a greater understanding surrounding the experiences and perspectives of paramedics with MHP. This information may be able to inform future training and education to directly address reasons why paramedics find this patient group challenging. This may include a clearer definition of a paramedic's role and goals relating to MHP, as well as education focusing on reducing stigmatized views of patients with a mental illness. As our study measured how a paramedic perceives their ability to attend to a patient, future research can extend on the findings from this study by attempting to measure a paramedic's true ability to respond to MHP, possibly through simulation exercises. This may identify other areas in a paramedic's practice that can be targeted to further improve the care they can provide to patients presenting with mental health concerns.

## Conflict of Interest

The authors report no conflict of interest.

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## APPENDIX – ITEMS FROM SURVEY AND QUESTIONS FROM INTERVIEW

### Themes and Items of Survey

Themes	Items
Perceived knowledge of conditions	<p>My knowledge of <u>mental health</u> patients is comprehensive</p> <p>I am able to recognize different types of <u>mental health</u> presentations</p> <p>I am knowledgeable on how to assess and treat a patient presenting with a <u>mental health</u> problem in the prehospital setting</p> <p>My knowledge of the different types of <u>mental health</u> presentations is poor – <i>Negatively coded</i></p> <p>I am easily able to recognize when a patient is presenting with a <u>mental health</u> problem</p>
Perceived ability to provide care that benefits the patient	<p>I believe I am able to provide care that helps <u>mental health</u> patients</p> <p>The care I provide to <u>mental health</u> patients provides benefit and improves their condition</p> <p>When attending a <u>mental health</u> patient, I know how to provide management/treatment that will assist the patient's condition</p> <p>The care I can provide <u>mental health</u> patients is limited and rarely beneficial for the patient – <i>Negatively coded</i></p> <p>I believe my education and training enables me to provide care that benefits <u>mental health</u> patients</p>
General confidence when attending to that patient presentation	<p>I am very confident when attending a patient presenting with a <u>mental health</u> problem</p> <p>I feel anxious when attending a patient presenting with a <u>mental health</u> problem – <i>Negatively coded</i></p>

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I feel stressed when called to a patient presenting with a mental health problem –  
*Negatively coded*  
I feel confident that I can assess and treat a patient with a mental health problem to a  
high standard  
I feel comfortable in my ability when attending a patient with a mental health problem

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*Note.* Underlined words were replaced with either “cardiac”, “respiratory”, or “trauma” to reflect different patient presentations.

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### Questions from Semi-Structured Interview

- 1) What patient presentations do you find most challenging to manage or treat? Why?  
*Note: If mental health presentations are not mentioned, ask: do you consider mental health patients challenging to manage or treat? Why/why not?*
  - 2) Rank your level of confidence between the following patient types: cardiac, respiratory, trauma and mental health. Explain each answer briefly.
  - 3) What do you see your primary role(s) being when attending patients with a mental health condition?
  - 4) Do you think in your position as a paramedic you are able to provide care that benefits mental health patients? Tell me more about that.
  - 5) Do you think you have enough knowledge of mental health conditions to assess and manage mental health patients to a high standard? Why/why not?
  - 6) Are you satisfied with the level of education and training you have received for mental health patients? Why/why not?
  - 7) Outside of your university education or professional development with your ambulance service, have you engaged in other education to assist with your knowledge around mental health patients?  
*Note: If the participant answers 'yes', ask for more information relating to this further education.*
  - 8) Is there anything else you would like to add surrounding your role as a paramedic in relation to mental health patients?
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