University of Southern Queensland

SUICIDE AND SUICIDALITY IN FIJI:

A SCOPING REVIEW

A Thesis Submitted by

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Abstract

Suicide is considered a major social and public health issue in Fiji, with the increasing number of deaths per year being of concern. Despite this, there is no recent synthesis of research regarding suicide and suicidality in Fiji to assist with understanding and planning appropriate preventative and intervention supports. To address this gap, a scoping review was conducted to identify what is known about suicide and suicidality in Fiji. Ten electronic databases were searched, resulting in 2459 potential studies being identified. After title and abstract screening, 30 studies were included for final analysis. A PRISMA flowchart was utilised to report the results with results being synthesised using a textual narrative approach. Some unique findings of this study include a high rate of suicide and suicidality among Indo Fijian females aged 15 to 30 years. Other key findings include a focus on singular suicide concepts such as death by suicide, a lack of clarity relating to suicide risk factors, a lack of emphasis on recent suicide theories, and the use of limited study design. This study is the first of its kind to widely scope and map the existing literature, to identify the unique features of suicide and suicidality in Fiji, and to identify the gaps in the existing literature. Findings from this study provide a basis to guide future research that will facilitate an enhanced understanding of suicide and suicidality in Fiji.

Keywords: suicide, suicidality, suicide ideation, attempted suicide, Fiji

Certification of Thesis

I, Mercy Hazarika Gogoi declare that the Thesis entitled Suicide and Suicidality in Fiji: a Scoping Review is not more than 100,000 words in length including quotes and exclusive of tables, figures, appendices, bibliography, references, and footnotes. The thesis contains no material that has been submitted previously, in whole or in part, for the award of any other academic degree or diploma. Except where otherwise indicated, this thesis is my own work.

Date: 07 November 2023

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CHAPTER 1: INTRODUCTION

According to the World Health Organisation (WHO), suicide is one of the leading causes of death internationally, particularly for 15 to 44-year-olds, irrespective of gender (WHO, 2023). Globally, around 700,000 people die from suicide annually, making suicide a major public health problem (WHO, 2023). Research has found that the impact of suicide is broad and impacts not only those bereaved by suicide but also the wider community. That is, those bereaved by suicide are particularly at risk of heightened depression and anxiety and of taking their own lives (Evans et al., 2020). Moreover, exposure to the suicide death of a friend or someone known in the community can lead to distress, which may increase the risk of suicide in those close to the deceased (Maple & Sanford, 2020). In addition to the psychological and emotional effects, death by suicide has a significant economic impact. As the suicide death rate is highest amongst individuals of working age, death by suicide may have a significant negative impact on the economic growth of resource-scarce countries through a decreased labor force (Yip & Zheng, 2021). These impacts are more likely to be felt in low and middle-income countries, such as Fiji, given that the majority of deaths by suicide occur in these countries (Renaud et al., 2022). Thus understanding suicide and suicide related behaviour in such countries is critical in terms of reducing psychological and emotional distress and the economic impact of such deaths.

1.1. Fiji and its Culture

Fiji is a middle-income nation situated in the Pacific Ocean off the eastern coast of Australia, with a population of 893,468 (Fiji Bureau of Statistics, 2021). It is a formerly colonised nation and consists of 332 islands, of which 110 are inhabited. The two main islands in Fiji are Viti Levu and Vanua Levu, which together comprise 87% of the total population. These islands are further divided into 14 provinces namely Ba, Bua, Cakaudrove,

Kadavu, Lau, Lomaiviti, Macuata, Nadroga-Navosa, Naitasiri, Namosi, Ra, Rewa, Serua, and Tailevu.

The two major ethnicities in Fiji are the Indigenous Fijians (also known as iTaukei), who comprise 57% of the total population, and the non Indigenous Fijians (also known as Indo Fijians) who comprise 37% of the total population. The remaining 6% of the population originates from a variety of different ethnic groups that include Chinese, Filipinos, Rotumans, people of European ancestry, and people from other Pacific territories (Fiji Bureau of Statistics census report, 2017). Indo Fijians are originally from India and were brought to Fiji by the British during the indenture period (1879–1916) to work as labourers in sugarcane cultivation. In terms of religion, unlike many other countries, Fiji is a religious nation (U.S. Department of State, 2022). The majority of the population in Fiji, particularly the Indigenous Fijians are predominantly Christian and the majority of the Indo Fijians are Hindu (74%), with an estimated 20% being Muslim and 6 % Christian. The remaining ethnic groups, such as those of European ancestry, and those from other Pacific territories are predominantly Christian.

Suicide is considered a major social and public health problem in Fiji (Fiji Ministry of Health and Medical Sciences, 2021). In terms of country-specific suicide rates, Fiji's age-adjusted suicide rate was 5.5 per 100,000 population in 2016. When compared to other countries such as Australia, Canada, and India, Fiji's suicide rate does not appear to be particularly high. Australia's age-adjusted suicide rate was 11.7 per 100,000 population in 2016, Canada's age adjusted suicide rate was 10.3 per 100,000 population, and India's age adjusted suicide rate was 16.5 per 100,000 population (WHO, 2019). Despite Fiji having a relatively low suicide rate, suicide has been seen as a major social and public health problem for the nation for some time (Mathieu et al., 2021). When the suicide data for Fiji is broken down by ethnicity, a more complex picture emerges. Death by suicide amongst the Indo

Fijian community has been reported to be higher when compared to the Indigenous population of Fiji (Mathieu et al., 2021). This higher rate of suicide among the non-Indigenous population therefore requires further investigation.

Unlike other countries, Fiji's suicide related data is not reported by age or ethnicity. The only characteristic reporting that is currently publicly available regarding Fijian deaths by suicide data is the total number of suicide deaths by gender (V. Dravi, personal communication, April 23, 2021). This means that the present and official death by suicide rates for Indo Fijians and Indigenous Fijians is unknown. This seems at odds with what Mathieu et al (2021) have noted, with Mathieu et al. basing their findings on previous studies. Additionally, suicide record keeping is seen to be less rigorous in Fiji than in other countries. Previous studies have argued that the suicide data recording in Fiji is most likely limited due to incomplete recorded information on suicide method or suicide reason (Chang, 2000; Forster et al., 2007; Nafiza et al., 2012; Mathieu et al., 2021). This raises questions regarding the validity of the current data that is being collected and reported on by the Fijian Government.

Reporting is further complicated as some cultural groups in Fiji discourage the recording of a death by suicide as suicide is viewed differently by different cultural and religious groups (Morris & Maniam, 2000). Within Hinduism, suicide is not always viewed as taboo or shameful, nor is death viewed as the final ending of life. Rather, suicide is sometimes embraced as an honorable act, with death being seen as an event that will be followed by a series of lives through rebirth (Vijayakumar & John, 2018). Conversely, Christianity considers taking one's own life to be taboo and shameful (Gearing & Alonzo, 2018). Therefore, the suicide death rate in Fiji may be further underreported, which is likely to be another obstacle to understanding the magnitude of suicide and suicidality in Fiji.

Given the above, one starting point in better understanding suicide in Fiji is identifying what research on suicide and suicidality in Fiji has been conducted to date. Currently, there is no clear or recent systematic overview of suicide research in Fiji. What this means is that it is difficult for information from such studies to provide a clear and consistent understanding of what is currently known about suicide and suicidality in Fiji that can be used as a foundation for suicide prevention and intervention. Due to the cultural diversity of Fiji, the findings of suicide research conducted in Western countries cannot be easily generalised to Fiji for use in suicide prevention and intervention planning. Further, although it is suggested that there is a higher rate of suicide amongst Indo Fijians (Mathieu et al., 2021), it is not clear if this is, in fact, the case due to noted data reporting issues and, if so, what is known about this differential rate. Thus a systematic review of research on suicide and suicidality in Fiji is needed.

1.2. Terminology

At this point, it is pertinent to define what this thesis means by suicide and related suicidal behaviour. There has been much debate in the literature regarding definitions of suicide, suicide ideation, and suicide attempts (Klonsky et al., 2016). Different researchers using different definitions, make comparisons across studies difficult. For the purpose of this thesis, suicidal ideation has been defined as thoughts of how to kill oneself, which can range from random thoughts to a detailed plan (Klonsky & May, 2015). A suicide attempt is a deliberate and conscious act of intending to kill oneself (Klonsky & May, 2015), whereas a suicide plan is the formulation of a specific method by which the individual intends to take their own life (O'Connor & Kirtley, 2018). Suicide is seen as the self-initiated act of killing oneself deliberately (O’Connor & Kirtley, 2018). Suicidality is a broader concept encompassing cognitive, emotional, and behavioural aspects such as suicide ideation, suicide plans, and suicide attempts (Obegi, 2019). Suicidal behaviour includes suicide ideation,

suicide attempts, and suicide plans (Obegi, 2019). Another aspect of suicide is impulsive suicide. The impulsive personality trait of an individual has been identified as having a relationship with impulsive suicidal behavior (May & Klonsky, 2016). Unlike non-impulsive suicide attempts, impulsive suicide attempts do not involve prior suicide ideation or a suicide plan (Lim & Park, 2016). They are argued to be an impulsive act and to be in response to uncontrollable aggression or trauma.

1.3. Review of Literature

Given the current study is a systematic scoping review, this review of the literature will focus on other reviews of suicide and suicidality in Fiji that have been conducted. Five reviews of the literature (Forster et al., 2007; Haynes, 1987; Marshall et al., 2016; Mathieu et al., 2021; Morris & Maniam, 2000) have been conducted to date. Two, are narrative reviews (Forster et al., 2007; Haynes, 1987) and the other three being systematic literature reviews (Marshall et al., 2016; Mathieu et al., 2021; Morris & Maniam, 2000). Considering narrative reviews often result in limited findings due to the absence of a comprehensive and systematic literature search (Henry et al., 2018), the three systematic literature reviews will be discussed further to understand what these reviews identified about suicide and suicidality in Fiji.

Morris and Maniam (2000) conducted a systematic literature review that aimed to understand the differential impact of ethnicity on the Fijian suicide rate. They included literature published from 1966 to 1996 to understand the relationship between ethnicity and suicide in Fiji. To identify relevant literature, the electronic database Medline was searched using the search strings “Suicide’’ and “Fiji’’. The review identified several studies that reported a higher suicide rate among Indo Fijians, especially young Indian women residing in rural agricultural areas, compared to Indigenous Fijians. The most commonly selected suicide method was the use of toxic agricultural biocides such as paraquat. The major risk factor for suicide identified by the review was religion and within that Hinduism, due to the majority of

Indo Fijians being Hindu. Other risk factors were Indo Fijians who migrated from the North-eastern part of India, living in rural agricultural areas and females aged between 15 to 30 years. Whilst these findings are important, Morris and Maniam themselves noted that the studies included in their review were not empirically based studies, as many studies did not refer to or include original data to support their claims. Most of the studies in their review were retrospective case series studies where secondary data was collected either from police or medical records. This is an issue because as noted previously, suicide record keeping has limitations in terms of incompleteness of data recording (Forster et al., 2007). Additionally, since medical records and police records are not written for research purposes, a significant amount of information which is often essential for research is not recorded.

Although Morris and Maniam's (2000) review was the first systematic review to provide a starting point in understanding previous research on suicide and suicidality in Fiji, there are several limitations that detract from their findings. By limiting the search to a single database, any research not included in Medline would have been overlooked and not included in the review. This means that relevant studies that included additional important information on suicide and suicidality in Fiji might have been missed. Furthermore, the search strings are problematic because only research that included the actual words suicide and Fiji were captured. Studies that did not use these terms and instead used other variants of suicide, such as suicidality, and suicidal, and other terms for Fiji, such as Pacifica, would not necessarily have been captured.

The authors also did not provide any detailed explanation about the number of studies initially identified from the original search or the criteria used for including or excluding studies which makes it difficult to know why some studies were included and why some were not. This lack of transparency impacts replicability for future research. Morris and Maniam (2000) also identified other published materials and research as part of their search strategy,

however, they did not make it clear what those published materials and research were or how they identified and located them. Additionally, no quality assessment of the included studies was conducted. Therefore, it is unclear if the included studies were of high quality with reliable findings. The uncertainty about how Morris and Maniam identified studies, how they determined which studies were included and not included, and limited database usage, raises questions about the validity of the research findings and its recommendations. It is therefore difficult for the review to be used as a basis on which future research on suicide in Fiji can be developed.

The Marshall et al. (2016) review aimed to identify suicide risk factors for suicide as they relate to Fiji. Two databases, Pubmed and PsycINFO, as well as Google, were used to search for relevant studies published in English from 2000 to 2014 using the search strings "Hang* and Fiji'', "Poison and Fiji'', "Non-accidental drowning and Fiji", "Fatal hangings and Fiji'', "Fatal poisonings and Fiji", "Intentional self-harm and Fiji", "Completed suicides and Fiji'', "Suicide attempts and Fiji'', "Suicide and Fiji'', along with hand searching of included study reference lists. A total of 12 papers were included in the final analysis. To assess the quality and potential bias of the data obtained from these 12 studies, the New Castle Ottawa scale (Wells et al., 2000) was utilised. This scale assesses the quality of nonrandomized studies using a "star system" based on three criteria. These are the selection of the study group, comparability of the group, and ascertainment of either the exposure or outcome of interest for case studies or cohort studies.

Marshall et al. (2016) concluded that there is evidence to indicate a higher risk of death by suicide among Indo Fijian males compared to Indo Fijian females. This finding contradicts the previous finding of Morris and Maniam (2000), which identified a high suicide rate among Indo Fijian females compared to Indo Fijian males. This indicates a potential change in suicide rate by gender in Fiji within a relatively short span of time.

Consistent with Morris and Maniam, the synthesised evidence suggests that there is a higher risk of death by suicide among Indo Fijians compared to Indigenous Fijians. Unlike Morris and Maniam who identified the use of pesticides such as paraquat poisoning as the common method for suicide, Marshall et al. identified hanging as the most common method of death by suicide followed by paraquat poisoning.

Although this systematic review has contributed to a more robust understanding of suicide and suicidality in Fiji based on its more systematic approach compared to that of Morris and Maniam (2000), it also has its limitations. Marshall et al. (2016) only considered the demographic risk factors of gender, age, and ethnicity. They did not look at other risk or protective factors, particularly those associated with current theories of suicide (e.g., sense of belongingness), and did not emphasise risk factors that have been found in other studies such as depression (Aghanwa, 2000; 2004). This non-inclusion potentially limits the understanding of the reasons for suicidal behaviour in Fiji. Additionally, Marshall et al. did not indicate if the included studies utilised a theoretical framework or looked at suicide from a theoretical perspective. This prevents us from understanding if studies in Fiji looked at suicide ideation and suicide attempt as two separate components to understand why an individual with suicide ideation would progress to a suicide attempt. Moreover, the use of only two databases may have meant that any relevant studies not included in these two databases were not identified and thus not included in the review. Studies have found that for optimal search results in systematic reviews, the use of databases such as CINAHL, PsychINFO, Web of Science, and Google Scholar is a minimum requirement to assure adequate coverage and identification of relevant studies (Bramer et al., 2017).

Marshall et al. (2016), like Morris and Maniam (2000), did not include the selection criteria for studies in their review, making it difficult to know on what basis were studies included or excluded. This raises concerns about its replicability and the reliability of its

findings. Whilst the review did incorporate a quality assessment of included studies, some components of the New Castle Ottawa Scale (Wells et al., 2000) are psychometrically problematic, particularly in terms of their reliability (Moskalewicz & Oremus, 2020). Therefore, using the New Castle Ottawa scale as a quality measure means that the included studies assessed as high quality may not be of high quality. Due to the lack of transparency around inclusion and exclusion criteria, the use of limited databases, the quality assessment of studies, and the ability to replicate the study, the validity and reliability of the findings are potentially impacted.

Putting aside the limitations, one of the significant findings of the Marshall et al. (2016) review is the shift in suicide trends and the change in suicide methods. Compared to the previous review (i.e., Morris & Maniam, 2000), this review identified a change in the suicide rate from female to male within a gap of 4 years (from 1996 to 2000). This is potentially emerging evidence of a suicide trend change over time. There also appeared to be a change in the method of suicide as where Morris and Maniam (2000) identified the use of pesticides as the most common method for suicide, Marshall et al. identified hanging as the most frequent. The high rate of suicide among the Indo Fijian community remains consistent in both reviews.

Another systematic literature review (i.e., Mathieu et al., 2021) was conducted recently to identify literature on suicide and suicide attempts in the Pacific Islands. This review aimed to determine mortality, prevalence, the common method, and the risk factors or risk groups for suicide and suicide attempts in the Pacific Islands to support suicide prevention in the Western Pacific Region. The review followed the PRISMA guideline for systematic reviews and a comprehensive search was conducted on the Web of Science, PubMed, PsychINFO, Cochrane, CINAHL, and Embase databases that retrieved articles up to February 1st, 2021. Studies were included if they focused on suicide and referred to the

Pacific Islands. The exclusion criteria were studies referring exclusively to other countries, studies not including suicide or suicide attempts, or studies not presenting original research. Thirty-six studies were included in the final analysis and a narrative synthesis was utilised to present the results. Findings highlighted the high age standardised rate of suicide mortality on Kiribati Island in the Pacific and that youths aged 15 to 30 years, people of Indian ethnicity in Fiji, and Indigenous people across other islands were risk factors for suicide. Common methods across all islands were self-poisoning and hanging.

Unlike the other two systematic literature reviews, this review utilised the PRISMA guidelines for systematic reviews which is a systematic approach to reporting the methods and findings that are transparent and replicable (Page et al., 2021). It also stated the search strategy and the inclusion and exclusion criteria with adequate clarity that would allow for replication. Whilst this is promising, the review included only suicide and suicide attempts and thus has a narrow scope of enquiry (Arksey & O'Malley, 2005). Moreover, not including suicide ideation, suicide plan, and suicidality would have resulted in overlooking other aspects of suicidal behaviours, which is essential to determining what leads to suicidal ideation and why an individual progresses from suicidal thought to suicide attempt or action. As this systematic review is narrow in its scope, the information included on suicide and suicidality in Fiji was not sufficient enough to draw a broader picture of suicide and suicidality in Fiji.

The findings of the previous two reviews (i.e., Morris & Maniam, 2000; Marshall et al., 2016) show a change in suicide risk from female to male and a change in suicide method from paraquat poisoning to hanging. This review (i.e., Mathieu et al., 2021) reported a high rate of suicide and suicidality among the Indo Fijians in Fiji, irrespective of gender. However, a high rate of suicide amongst Indo Fijian females was highlighted in the review, along with mentioning that the rate of suicide for Indo Fijian males' suicide had previously been higher.

This appears to be different from what has been reported by Morris and Maniam (2000), who reviewed literature from 1966 onward. According to Morris and Maniam, the suicide rate of Indo Fijian females was high during the earlier period. These contradictory findings indicate a lack of clarity about suicide risk by gender in Fiji.

Based on the above reviews, there is a suggestion that Indo Fijians have higher suicide rates than Indigenous Fijians and that religious issues along with residency within rural areas may be potential risk factors for suicide and suicide attempts. Although these reviews provide a base overview of suicidality in Fiji, the limitations associated with them call into question their current ability to guide future research on suicide and suicidality in Fiji and guide suicide prevention and intervention efforts. In particular, the exclusion of suicidal ideation makes it difficult to use these as a basis for suicide prevention and intervention programs. Moreover, before 2009, suicide in Fiji was considered a crime ((Lew et al., 2022). Therefore, trends, patterns, and risk factors for suicide and suicidal behaviour that were identified before 2009 may have changed after the decriminalization of suicide in Fiji. The review conducted by Morris and Maniam (2000) included studies which suicide in Fiji was considered a crime. Hence, relying on the risk factors identified in Morris and Maniam's review does not have relevance in the present time. Another review by Marshall et al (2016) is not recent. Since suicide trends, patterns, and risk factors change over time (Centers for Disease Control and Prevention, 2023), a more recent review is needed to ensure any changes have been captured to support the policymakers in developing policies, interventions, and preventive measures for suicide in Fiji in the present time. Therefore, a recent broader review is required to capture a wider range of literature that focuses on suicide and suicidality in Fiji in the one review. Further, the focus on risk factors that do not necessarily reflect contemporary theoretical understandings of suicide is also problematic.

1.4. Theories of Suicide

Several theories of suicide have been developed to explain why an individual wishes to take their own life. The earliest work is Durkheim's Typology of Suicide (1897, 1951). Durkheim argued that suicidality can be influenced by social factors such as the feeling of disconnection or detachment from a society or excessive stimulation by social forces (e.g., social, economic, and political upheaval). Durkheim claimed that the more socially connected an individual felt, the less likely they would be to take their own life. The main issue with Durkheim's theory is that it overlooks the role of psychological and emotional factors that are part of an individual's decision to take their own life. A later theory on suicide by Beck (1975) encompassed this, emphasising the role that hopelessness may play with regard to suicidal behaviours. Beck considered hopelessness to be a negative perception of the future. Thus, when an individual perceives that their psychological and emotional pain will not improve and that there is no hope for the future, they are more likely to consider that taking their own life is the only way to overcome their psychological pain. Building upon this notion of psychological pain, Shneidman's (1985; 1993) Psychache theory was the next influential theory to emerge. Shneidman posited that suicide is a response to unbearable psychological or emotional pain, referred to as psychache. According to this theory, increased psychache (i.e., intensive psychological and emotional pain) leads to suicidality.

Although the above theories have been useful in guiding early suicide research, one of the key criticisms of these theories is that they fail to differentiate between individuals who experience suicidal ideation, and those who make a suicide attempt or take their own life (Klonsky & May, 2014). This distinction is important, as not every individual who experiences suicidal ideation initiates an attempt or takes their own life. Further, they fail to explain how an individual moves from ideation to making an attempt.

1.4.1. Ideation to Action Framework

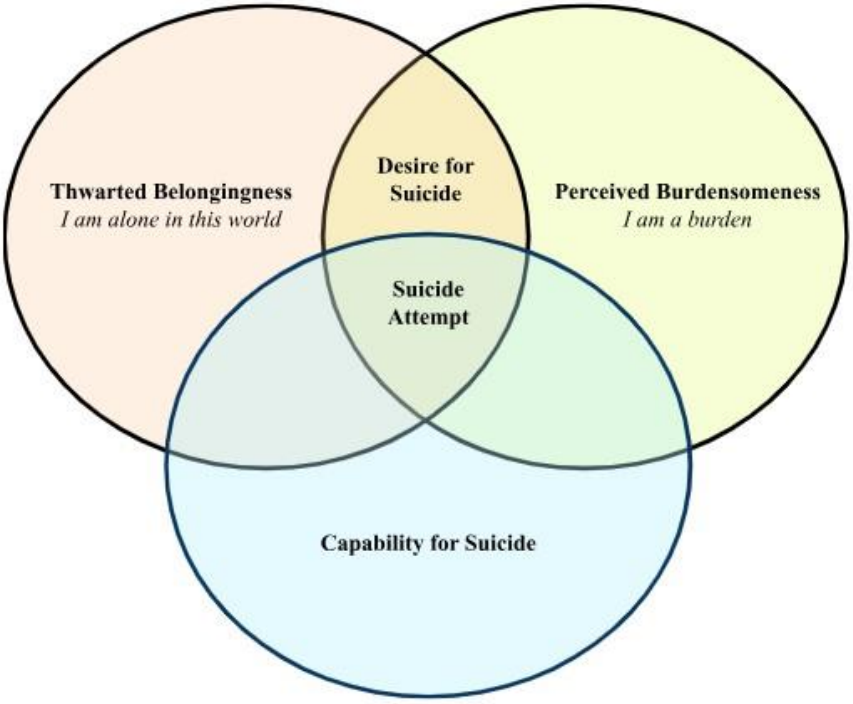
A newer generation of theories has recently emerged that argues suicidal ideation and the progression from suicidal ideation to attempt are two distinct but interrelated processes. The first of these is the Interpersonal Theory of Suicide (Joiner, 2005). According to this theory, suicide can occur if there is a desire to end one's life (i.e., suicidal ideation), along with the ability to do so. Joiner (2005) argues that an individual is likely to develop suicidal ideation if they experience a thwarted sense of belongingness and perceived burdensomeness. Thwarted sense of belongingness is the sense of a lack of belongingness to a family, to a community, or a purpose in life. This combined with perceived burdensomeness (i.e., the feeling of being a burden to the family or the community) are argued to be factors that lead to the desire to end one's life.

For an individual to progress from the desire to end their life to acting upon it, they must also have the capacity to act on this desire (Joiner, 2005). In other words, to progress from thinking of suicide to attempting suicide (i.e., suicidal ideation to action), along with an increased desire to die, one must have the capacity to overcome one's fear of death (see Figure 1 below). According to Joiner, an individual can develop this capacity through increased exposure to painful experiences, such as past self-injury behaviour, which is said to lead to habituation or an increased tolerance to pain. This theory has been supported by several empirical studies that focus on a wider range of populations including prison inmates, clinical populations, and undergraduate students (Chu et al., 2017; Ma et al., 2016; Tucker et al., 2018). Though this theory effectively explains the risk factors that could lead to suicidal behaviour, it does not accurately predict how these factors interact and lead to suicidal behaviour. For instance, it is not clear when and at what stage of intensity an individual in a heightened state of suicide risk will engage in suicidal behaviour. This is a limitation of this

theory (Chu et al., 2017). Additionally, further investigation is required to confirm if the three factors mentioned in this theory can adequately identify suicide risk.

Figure 1

Interpersonal Theory of Suicide



The next theory that was developed was the Integrated Motivational Volitional Model of Suicide (O'Connor, 2011). This model is similar to the Interpersonal Theory of Suicide (Joiner, 2005) in that it proposes a separate explanation for suicidal ideation and suicide attempts. However, unlike the Interpersonal Theory of Suicide, which emphasises that thwarted belongingness and burdensomeness are required for suicidal ideation; the Integrated Motivational Volitional Model of Suicide also includes feelings of being trapped. According to this theory, suicidal ideation develops from the feeling of entrapment caused by

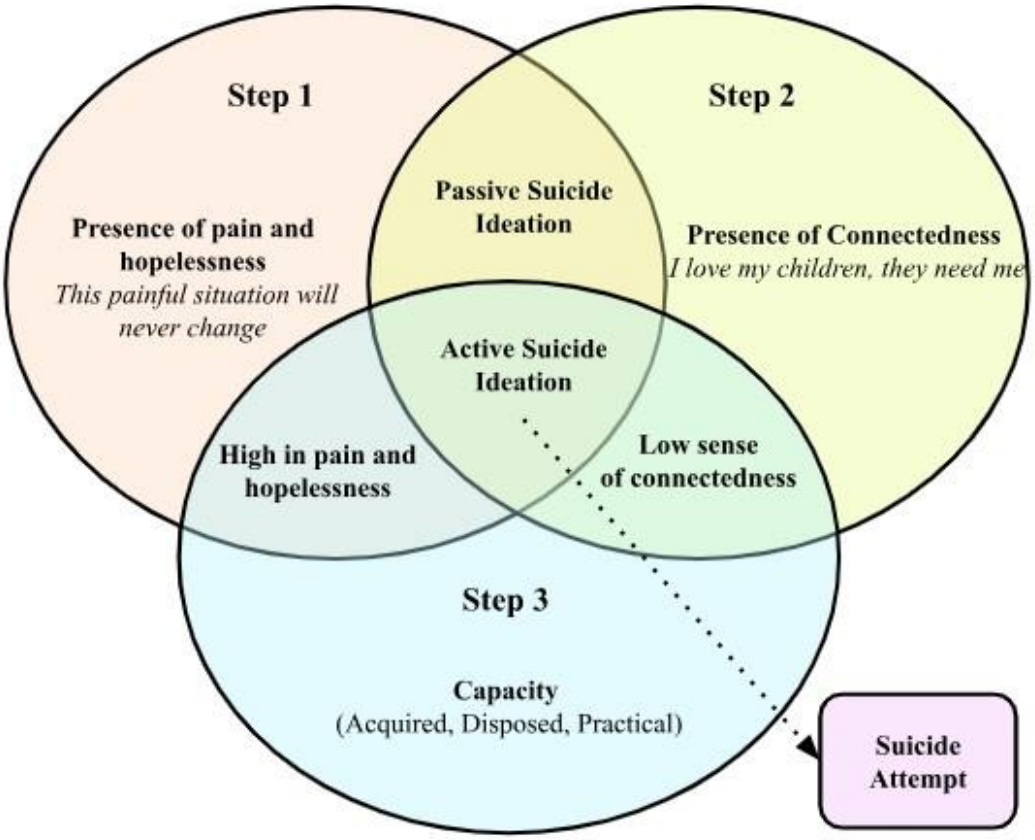
experiencing humiliation or defeat which leads to feelings of hopelessness, and where an individual perceives suicide as the only option to address these feelings. This theory expanded on Joiner's concept of suicide capacity by including distinct volitional factors. Along with capacity, O'Connor (2011) argues that the presence of a group of other supportive factors such as access to resources for suicide, exposure to someone's suicidal behaviour, impulsivity, and mental imagery can lead to a volitional phase which is the transition from suicidal ideation to suicide attempt. Several recent studies have also provided support for this theory (e.g., Branley-Bell et al., 2019; Dhingra et al., 2016). Although this theory provides a comprehensive understanding of the emergence of suicidal ideation and its progression from ideation to action, one limitation of this theory is that it may not have the utility of explaining suicidal behaviour across a diversity of cultures. Though this theory has been tested in some non-western cultural settings (i.e., Hye-Ji &Sung-Woo, 2017; Atilola & Ayinda, 2015) considering the diverse needs and challenges different ethnic and cultural groups face, the effectiveness of this theory in identifying suicide prevention and intervention measures for all ethnic and racial groups needs to be further explored (O'Connor & Kirtley, 2018).

The above two theories conceptualise suicide capacity as a single contributor that underpins the movement from suicidal ideation to suicide action. Considering the complexity of suicidal behaviour, it is unlikely that one single contributor can move someone from ideation to an attempt (Bayliss et al., 2022). Klonsky and May (2014), therefore developed the Three-Step Theory, which is the latest theory in the ideation-to-action framework. The theory builds upon and extends the previous two theories and consists of three steps that explain the formation of suicidal ideation and the progression of suicidal ideation to suicide attempt. According to the first step, suicidal ideation is formed due to the presence of pain, which may be psychological or physiological pain. It also includes feelings of hopelessness in

that the pain is unlikely to improve. It is the combination of pain and hopelessness that leads to passive suicidal ideation. In the second step, a sense of connectedness (i.e., an attachment to someone or something that gives purpose and meaning to life) moderates the escalation of ideation to action. If the feeling of connectedness is greater than the existing pain, then the individual will most likely not progress to a suicide attempt. If the existing pain is greater than the sense of connectedness, it can lead to active suicide ideation, where it is likely that the individual will move from thinking about taking their own life to making plans and acting to take their own life as shown in Figure 2.

Figure 2

The Three Step Theory of Suicide



Though this theory also posits that suicide ideation and moving from ideation to attempt are two distinct processes, it differs from the other two previous theories. The Three Step Theory argues that the progression from ideation to action takes place when three distinct contributors are present: acquired (i.e., habituation to pain as mentioned by Joiner, 2005), dispositional (i.e., genetic, temperamental, and personality factors), and practical (i.e., knowledge of, and access to lethal means). If an individual with suicidal ideation has these three components present, and their pain is greater than their connectedness, then it is likely that the individual will progress to attempting suicide (Klonsky & May, 2014). Some aspects of the theory, such as pain and hopelessness, are critical to measure, as the patterns of pain and hopelessness could be perceived differently across different cultures and racial groups. Therefore, further testing and evaluation needs to be done to ensure its utility and

applicability in diverse populations (Klonsky et al., 2021). The above theories present suicide risk and protective factors that go beyond age, gender, physical location, and religious beliefs. They include such concepts as connectedness, sense of belongingness, psyche, and suicide capacity. So far, these have been overlooked and not identified in previous reviews of literature relating to suicide and suicidality in Fiji. As these reviews did not include any theoretical perspective, the previous reviews are potentially limited in providing an enhanced understanding of suicide risk and protective factors.

1.5. Justification, Aims and Objectives

Past systematic reviews have focused on only two aspects of suicidality, specifically, death by suicide and attempted suicide. Given the theoretical link between ideation and attempt (Joiner, 2005; Klonsky & May, 2014; O'Connor, 2011), the current scoping review included all aspects of suicidality, which include death by suicide, attempted suicide, suicide ideation, and suicidal behaviour. The two systematic reviews which specifically focused on suicide in Fiji, were outdated (i.e., the last review on suicide in Fiji was conducted 7 years ago) and may have missed more recent research that has been conducted. The latest review which was conducted in the year 2021 did not specifically look at suicide in Fiji but at suicide in the entire Pacific islands. Therefore, this review does not provide sufficient information to help understand the uniqueness of suicide in Fiji. Additionally, being narrow in scope, these reviews did not capture a broader understanding of suicide and suicidality in Fiji. Because it is unclear what research has been conducted to date on suicide and suicidality in Fiji, a review that more broadly scopes and maps all relevant existing literature on suicide and suicidality in Fiji is needed.

Gaining an understanding of what is known and not known about suicide and suicidality in Fiji will assist in identifying not only what future research needs to be conducted but will provide an evidence base that can be used to develop evidence-based

suicide prevention and intervention programs. Currently, there is no recent research synthesis in Fiji focusing on the broader aspects of suicide and suicidality. Therefore, this thesis sought to address this gap. This thesis is comprised of one study, a systematic scoping review. The aim of this scoping review was to broadly map the existing literature on suicide and suicidality in Fiji and to identify research gaps that would help identify what research needs to be conducted to better understand suicide and suicidality in Fiji.

The following chapters of this thesis are as follows: Chapter 2: Method, first elucidates the rationale for the chosen methodology and outlines the six-step scoping review procedure used in this study. Chapter 3: Results, presents the data analysis and synthesis of identified study findings. Chapter 4: Discussion, is the final chapter and discusses the characteristics and gaps of the included literature. In this introductory Chapter 1, the topic of enquiry was highlighted, and the aims and objectives, terminologies, review of literature, theoretical framework, and justification of this study were discussed.

CHAPTER 2: METHOD

This study adopted a systematic scoping review as its methodology. A systematic scoping review is a research study that seeks to map existing literature and identify research gaps (Arksey & O'Malley, 2005). It is particularly appropriate for synthesising areas when there is either limited research or a large amount of research associated with an area (Sequeira et al., 2019). The extent to which a scoping review explores the existing literature depends upon the purpose of the review (Peters et al., 2020). The four common reasons to undertake a scoping review as outlined by Arksey and O'Malley (2005) are: to map the range and nature of the available literature related to a particular research area; to determine the value and feasibility of engaging in a systematic review; to provide a detailed overview of the available literature by summarising and disseminating research findings to guide policy-making; and to identify gaps in the existing literature. This final purpose is more in-depth as it not only maps the overall state of current research activity but also identifies research gaps, which aids in identifying further research that needs to be conducted in that area.

The current study is aligned with the first and fourth purposes (i.e., mapping and identifying gaps). This type of scoping review was appropriate in addressing the current research question as there was no recent systematic synthesis of research evidence that in particular captured broader aspects of suicide and suicidality in Fiji.

Traditionally, a systematic literature review is preferred when synthesising literature because of its rigorous and replicable identification, search, and synthesis functions (Munn et al., 2018). However, systematic literature review methodology is not always appropriate for every synthesis study and is best suited to answering specific questions related to particular study designs. These are designs that are identified in advance, and questions usually relate to the efficacy of a clinical intervention. The systematic literature review is narrow in its scope

and purpose as it aims to provide answers to questions from a relatively narrow range of quality-assessed studies (Arksey & O'Malley, 2005). Though both scoping reviews and systematic literature reviews use rigorous and transparent methods to comprehensively identify the relevant studies, unlike a systematic literature review, a scoping review aims to provide a broader overview of all relevant existing evidence relating to an area, regardless of the type or quality of the studies. Given that the exact nature, trends, and patterns in the existing literature on suicide and suicidality in Fiji are unclear based on previous reviews and their noted limitations, the research question relating to this study was necessarily broad in nature. Therefore, a systematic literature review was deemed to be unsuitable. A scoping review was determined to be more suitable for this broad type of research investigation as it would be able to identify evidence of suicide and suicidality in research which is relatively unknown, and scope all the existing literature irrespective of study design.

2.1. Methods

This scoping review utilised the six-step framework proposed by Arksey and O'Malley (2005) with recommendations from Levac et al. (2010) being adopted. The steps were as follows.

2.1.1. Stage 1: Identifying the Research Question

Arksey and O'Malley (2005) describe this first step as the guide for all other steps and recommend formulating a broad research question that results in a wide coverage of the substantive area to reduce the likelihood of missing any relevant evidence. Levac et al. (2010) suggest that the research question should be articulated clearly to guide the scope of enquiry by considering the target research population, as well as the concept, and context to enable a clear focus for the study and to establish an effective search strategy. Levac et al. (2010) recommended that researchers should also focus on the purpose of the scoping review while formulating the research question.

As noted earlier, there was no recent synthesis of research on suicide and suicidality focused on Fiji, and thus an evidence base relating to suicidal ideation, suicide attempts, suicide plans, and suicide in Fiji was absent. Therefore, this study aimed to contribute to a better understanding of suicide and suicidality in Fiji by mapping the existing literature and identifying research gaps to understand the nature, trends, and patterns of suicide in Fiji. Identifying the research gaps in the existing literature assists in planning what research needs to be conducted in the future to strategically enhance knowledge and understanding of suicide in Fiji.

To achieve this, the scoping review aimed to answer the following research question, what is known from the existing literature about suicide and suicidality in Fiji. The research question was formulated using the Joanna Briggs Institute's Population, Concept, and Context mnemonic (PCC; Peters et al., 2020). All systematic reviews use a mnemonic to guide the development of the research question. The PCC is broad in nature and thus suitable for scoping studies as it enables a clear articulation of what will be the focus and scope of inquiry (Pollock et al., 2023). In this mnemonic, Population refers to the type of participants that are to be included in the scoping study. Concept refers to the core concept that is to be examined, and Context includes the geographical setting, cultural background, or community, depending on the objective of the scoping study (Peters et al., 2020).

In this study, the PCC categories were defined as follows:

- **Population**: Fijian citizens from any ethnic background, age group, or gender.
- **Concept**: To identify what is known about suicide, suicidal ideation, suicide plans, and attempted suicide in Fiji.
- **Context**: Fiji including all its islands.

2.1.2. Stage 2: Identifying Relevant Studies

This stage involved identifying relevant studies by planning a detailed search strategy. According to Arksey and O'Malley (2005), since a scoping review is broad in nature and focuses on identifying the breadth of the available evidence, it is required to balance the breadth and comprehensiveness of the scoping study search strategy with the resources available. Thus the feasibility of the study needs to be decided in an a priori manner. Levac et al. (2010) also suggest that the research question and the purpose of the scoping study should guide the scope of inquiry which should not be too broad or too narrow, and should be well justified with potential limitations acknowledged.

To identify relevant studies, an initial search strategy was developed in consultation with a research librarian, using the terms suicid* AND Fiji*. As each stage of a scoping review is an iterative process, this search string was tested and modified to ensure that relevant literature was being captured and to minimise irrelevant inclusion in the first search step. This initial search string yielded a majority of irrelevant studies which was out of the scope of inquiry (see Appendix A). Consequently, the final search string which was utilised for the search was (suicid*) AND (Fiji* OR Pacifi*). In pre-testing this search string, it was found that using the asterisk symbol, and the use of parenthesis as in (suicid*) AND (Fiji* OR Pacif*), identified research relating to suicide attempts, suicidal ideation, suicide plans, and suicide in Fiji which captured relevant studies, though it didn't prevent from capturing some irrelevant studies too. More specifically, using (suicid*) captured articles that not only focused on suicide but also suicide attempts, suicidal ideation, and suicide plans. Whereas using (Fiji* OR Pacif*) captured articles that directly referenced Fiji, Fiji Island, Indo Fijian, Indigenous Fijian, and Fijian, or captured articles referring to Pacific Islands, Pacific island nations, and Western Pacific Countries that may or may not contain a result relating to Fiji.

On 22nd of December 2021, the first and second authors, Mercy Hazarika Gogoi and Lee-Ann Forrest (MG and LF hereafter) independently conducted the initial search for relevant studies using the search string (suicid*) AND (Fiji* OR Pacif*). To conduct a comprehensive search that would identify relevant studies, the search was conducted using the following electronic databases: PsycArticles, PubMed, Academic Search Ultimate, CINALH with a full text, Google Scholar, Psychology and Behavioural Science Collection, APA PsycINFO, SAGE journals, Sociology Search Ultimate and ProQuest applying the same search string. These databases were utilised for the search since they were most likely to include relevant data in the field of psychology whilst minimising duplication of studies. There was no restriction on study design or date of publication for the search. This allowed for all the available information about suicide and suicidality in Fiji to be captured and provided identification of any changes in suicide and suicidality trends over time. The search was conducted by Title first and then Abstract. The search results were consistently compared after each database search by MG and LF to ensure both reviewers were identifying the same number of articles in each database search to maintain consistency and replicability. There was no disagreement between the two reviewers and the same search results were yielded by the two reviewers for each database searched (see Appendix B).

All search results were managed using the reference management software EndNote V9 (Bramer & Bain, 2017; Risley, 2019). The search results from each of the databases were stored and recorded in a folder for each database. Duplicate citations were removed after the initial search by MG and LF following 13 steps as described by Falconer (2018). The total number of relevant articles identified from the search was 2459, of which 739 were duplicates and subsequently removed. After duplicate citations were removed, 1720 articles remained for Stage 3 screening.

2.1.3. Stage 3: Study Selection

As a scoping review seeks to identify existing studies as comprehensively as possible, there is the possibility of including irrelevant studies that do not relate to the research question (Arksey & O'Malley, 2005). To avoid this, clear and detailed inclusion and exclusion criteria were developed by the research team to assess study suitability as shown in Table 1.

Table 1

Inclusion and Exclusion Criteria

Inclusion	**Exclusion**
Studies that have a measure of suicide, suicidal ideation, suicide plan, and suicide attempt with no restriction on study design or date of publication. For this review, suicide is defined as the act of killing oneself intentionally. Suicidal ideation is defined as thinking about suicide without making any plans to attempt suicide. Suicide attempt is defined as the action aimed at taking one's own life. Suicide plan is thinking and making plans to attempt suicide.	Studies which focus primarily on Deliberate Self Harming behaviour (DSH) and Non-Suicidal Self Injury (NSSI). This is because, although DSH and NSSI appear to be very similar to suicide-related behaviour, the intention behind the actions differentiates them. NSSI is a behaviour one adopts to cope or to feel better, whereas suicidal behaviour shows the intention to end one's life (Whitlock et al., 2015).
Studies published in English with no restriction to date or study type	Studies not written in English or translated into English are excluded due to the lack of resources for translating articles.
Studies must include participants who are Fijian citizens living in Fiji. There is no age or gender restriction.	Studies that include Fijians who are not living in Fiji will be excluded.

All articles (N = 1720) identified from the stage 2 search were independently screened against the eligibility criteria in two steps by MG and LF. First, title and abstract screening was conducted, followed by a full-text screening of articles that remained as a result of step one screening. Title and abstract screening resulted in the exclusion of 1669 articles, leaving

51 articles for full-text screening. Full-text screening of these 51 articles resulted in the further exclusion of 21 articles, leaving 30 articles for final analysis and synthesis. The reference lists of these 30 included studies were reviewed independently by the two reviewers to identify any relevant studies that might have been missed in the initial database search. No further studies were identified during this review. The reasons for excluding the 21 articles in the full-text screening have been included in the Preferred Reporting Items for Systematic Reviews and Meta-Analysis (PRISMA) flowchart in Chapter 3. An Excel spreadsheet was also used to record the reasons for including or excluding each article in the full-text-screening (see Appendix C). Inclusion and exclusion were compared at the end of each screening step to ensure consistency. An error was identified by Andrea Lamont Mills (ALM) during this audit process which required re-applying the inclusion and exclusion criteria to three articles that were subsequently excluded for not including any measure of suicide, suicidal ideation, or suicide attempt. This required recharting, re-collating, summarising, and reporting of the articles. Initially, there were 33 articles for the final analysis. After excluding a further 3 articles from the 33 articles in the audit process, 30 remained for the final analysis. This process was completed by MG with the assistance of a research librarian to ensure no error was made in the EndNote. The rating of the articles for inclusion and exclusion was documented in Endnote.

2.1.4. Stage 4: Data Extraction

Key study information such as: (a) year of publication, (b) author, (c) study location, (d) population, (e) aims/ purpose, (f) sample size, (g) methodology/method, (h) result and findings relevant to the scoping review research question were charted from all 30 included studies. The first reviewer MG developed a charting form utilising the JBI data charting form (Briggs, 2020) as a template to ensure the inclusion of all required information necessary to answer the study's research question. According to Bayliss et al. (2022), the charting

template should be pre-tested to ensure relevant information is captured. The charting form for this study was therefore discussed and tested with the research team using the first five included articles to ensure the incorporation of all required information. Based on this testing the form was further modified to include additional information such as limitations identified by the reviewer. This was relevant because the current study aimed to identify gaps in the existing literature. Data from each article was extracted independently by MG, and after the completion of data extraction, a random selection of 20% of the articles was audited by the research team members LF, ALM, and Carol du Plessis (CP) to ensure consistency and accuracy of extraction. The selection of 20% was based on the previous scoping review audit recommendations (see Bayliss et al., 2022; Perry et al., 2020; Pyle et al., 2021).

Though it is not mandatory for scoping reviews to assess the quality of the selected articles (Arksey & O'Malley, 2005), as this study also aimed to identify gaps in the existing literature, the quality of each study was also assessed. This was completed by MG using adapted JBI critical appraisal checklist tools (Munn et al., 2020; Peters et al., 2020). This checklist provided a process for the reviewer to critique or appraise the articles by assessing the methodological quality of the studies. As per JBI guidelines, reviewers can adopt a point-scoring system to assist in making judgments about the quality of the included studies. For this study, MG appraised each study by giving each item on the checklist either one point if scored as '*yes*' or 0 points if scored as '*no*'. Scores were then added and converted into a percentage. Similar to the Perry et al., (2020) scoring system, studies scoring less than 50% were defined as poor-quality research, studies scoring between 50%–80% moderate quality research, and studies scoring greater than 80% were defined as high-quality research. To ensure accuracy, the quality assessments of all the included studies were further audited by LF which yielded the same result. The overall quality assessment for each study was recorded on the data extraction form associated with the study.

2.1.5. Stage 5: Collating, Summarising, and Reporting the Articles

As recommended by Levac et al. (2010), results were presented using the PRISMA framework to indicate the outcome and the end product of the study (Moher et al., 2009; Tricco et al., 2018). The extracted data from each study was summarised in table format to help structure the findings and presentation of results. There are various approaches to summarising information. Arksey and O'Malley (2005) propose the use of a descriptive analytical method as a scoping review is not a short summary of many articles. Levac et al. recommend the use of a qualitative content analysis approach. This approach is systematic and sufficiently precise enough to allow replicability for multiple coders. However, it is concise in analysing the raw data and does not interpret new information. Textual narrative synthesis on the other hand is an approach that is both systematic and transparent and also allows interpretation of new insights from the acquired evidence. Therefore, a textual narrative synthesis was used to integrate and analyse the included studies. This enabled the description of characteristics, outcomes, and key findings of the included studies and also discussed the identified limitations of the articles.

2.1.6. Stage 6: Consulting and Translating Knowledge

According to Arksey and O'Malley (2005), the sixth and final stage is an optional stage for conducting a scoping review. However, Levac et al. (2010) recommend that it be considered a required component as it adds methodological rigor through the exchange and transference of knowledge with stakeholders from the same field. Although this optional consulting and translating knowledge stage was considered for inclusion in the current study, it has not been enacted at this stage due to time requirements associated with the current Master's degree. However, the scoping review will be submitted for publication to an appropriate journal such as the Asia-Pacific Journal of Psychology or Crisis- the Journal of Crisis Intervention and Suicide Prevention. Further, the submission of an abstract for

presentation at a relevant mental health conference is also being considered (e.g., the 25th International Mental Health Conference). Other options to present findings to relevant professional organisations (e.g., Fiji Psychological Society) are currently being explored.

CHAPTER 3: RESULTS

To reiterate, after searching all databases, a total of 2459 articles were retrieved. Once duplicates were removed (*n* = 739), a total of 1720 articles remained for title and abstract screening. This screening resulted in 1669 articles being excluded for not meeting the inclusion criteria (see Table 1 for the inclusion/exclusion criteria), leaving 51 articles for full-text screening. Full-text screening resulted in 21 articles being further excluded, leaving 30 articles for final synthesis and analysis. The reasons for excluding these 21 articles during the full-text screening are included on the PRISMA flowchart (see Figure 3 for screening information).

3.1. Characteristics of the Included Studies

3.1.1. Study Focus

Of the 30 studies, the majority (*n* = 24) focused on a singular suicidality concept. These were death by suicide (*n* = 18), attempted suicide (*n* = 5), or suicidal ideation (*n* = 1). The remaining 6 studies focused on a combination of concepts and were as follows: death by suicide and attempted suicide (*n* = 5: see Chang, 2000; Lal et al., 2016; Mathieu et al., 2021; Nafiza et al., 2012; Peiris et al., 2012); or death by suicide and suicide ideation (*n* = 1: see Muertigue & Naiker, 2018). There were no studies that examined both suicide ideation and attempted suicide. The majority of the earlier studies focused on a singular suicide concept which was death by suicide. Of the five studies that focused on attempted suicide, three were sequential studies conducted in 2000, 2001, and 2004 (Aghanwa, 2000; 2001; 2004). The study which focused on suicidal ideation was conducted to determine the rate and its correlation among school-going adolescents in Fiji (Mazaba et al., 2017). See Table 2 for a breakdown of study characteristics.

Figure 3

The Preferred Reporting Items for Systematic Reviews and Meta-Analysis Flowchart

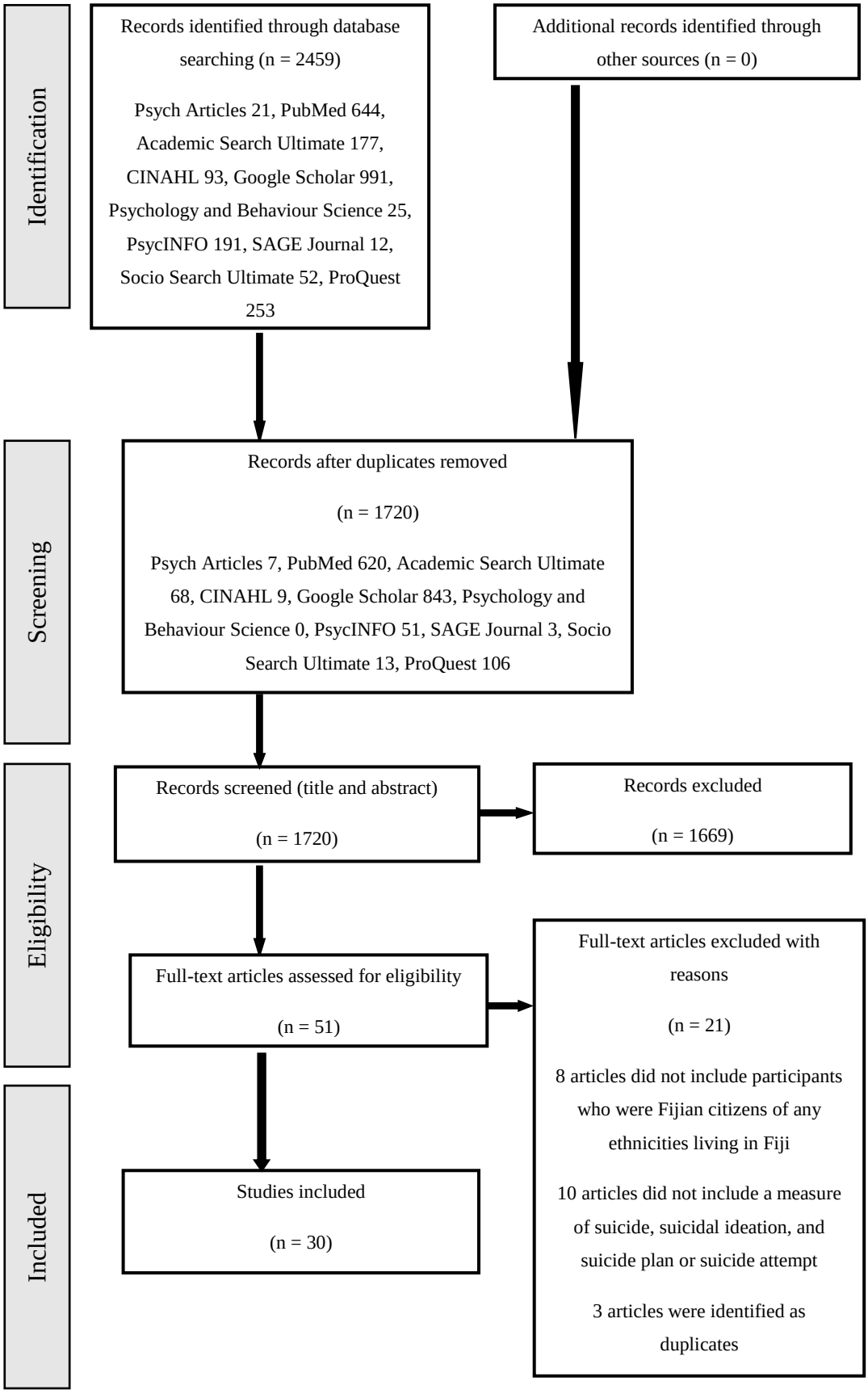


Table 2

Characteristics and Findings of the Included Studies

Author	Study Location	Study Design	Study Focus	Study Data and Measures	Study Quality	Study Sample Size	Focused Ethnicity	Focused Age and Gender	Finding of Ethnicity	Finding of Age and Gender	Finding of Risk Factors	Finding of Methods
Ree, 1971	Macuata province	Case series	Death by suicide	Secondary data is sourced from police records. The measure is death by suicide as noted in the police record	Medium	73 cases	Indo Fijian and Indigenous Fijian	NA	The majority of the cases reported were Indo Fijian	Age:15-24 years Gender: Female	Married, rural background	Hanging
Karim & Price, 1973	Whole of Fiji	Case series	Death by suicide	Secondary data is sourced from medical records. The measure is death by suicide as noted in the medical record	Medium	90 cases	Indo Fijian, Indigenous Fijian, and other ethnic groups	NA	The majority of the cases reported were Indo Fijian	Age:15-24 years Gender: Female	Rural background	Hanging
Price & Karim, 1975	Whole of Fiji	Case series	Death by suicide	Secondary data is sourced from medical records. The measure is death by suicide as noted in the medical record	Medium	90 cases	Indo Fijian, Indigenous Fijian, and other ethnic groups	NA	The majority of the cases reported were Indo Fijian	Age: 15-24 years Gender: Female	Rural background	Hanging

Author	Study Location	Study Design	Study Focus	Study Data and Measures	Study Quality	Study Sample Size	Focused Ethnicity	Focused Age and Gender	Finding of Ethnicity	Finding of Age and Gender	Finding of Risk Factors	Finding of Methods
Haynes, 1984	Macuata province	Case series	Death by suicide	Secondary data is sourced from police records and medical records. The measure is death by suicide as noted in the police record and the medical record	Medium	69 cases	Indo Fijian and Indigenous Fijian	NA	The majority of the cases reported were Indo Fijian	Age: Female <30 male> 30 Gender: Female	Married, Rural Background, economic pressure, ill health, family disputes	Hanging and paraquat poisoning
Lal, 1985	Whole of Fiji	Case series	Death by suicide	Secondary data is sourced from the register of deaths of Indian immigrants in Fiji. The measure is the death by suicide of Indian Immigrants as noted in the register of Indian immigrants in Fiji	Medium	291 cases	Indo Fijian laborers during the indenture period	NA	NA	Age: 21-30 years Gender: Male	Sexual jealousy, Hindu religion	NA
Haynes, 1987	Whole of Fiji	Review of literature	Death by suicide	Secondary data is sourced from previous literature. The measure is death by suicide as noted in the previous literature	Low	NA	Indo Fijian	NA	NA	Age: 15-30 years Gender: Female	Rural background, Hindu religion, interpersonal conflict	Hanging, paraquat poisoning

Author	Study Location	Study Design	Study Focus	Study Data and Measures	Study Quality	Study Sample Size	Focused Ethnicity	Focused Age and Gender	Finding of Ethnicity	Finding of Age and Gender	Finding of Risk Factors	Finding of Methods
Pridmore & Ryan, 1994	Whole of Fiji	Case series	Death by suicide	Secondary data is sourced from the Fiji Ministry of Health. The measure is death by suicide as noted in the annual reports of mortality and morbidity of the Fiji Ministry of Health	Medium	NA	Indo Fijian and Indigenous Fijian	NA	The majority of the cases reported were Indo Fijian	Age: NA Gender: Female	Domestic violence, cultural factors	NA
Pridmore, Ryan & Blizzard, 1995	Whole of Fiji	Case series	Death by suicide	Secondary data is sourced from the Fiji Ministry of Health. The measure is death by suicide as noted in the annual reports of mortality and morbidity from the Ministry of Health	Medium	NA	Indo Fijian and Indigenous Fijian	NA	The majority of the cases reported were Indo Fijian	Age: NA Gender: Female	Domestic violence, cultural factors	NA
Adinkrah & Chand, 1996	Whole of Fiji	Cross-sectional study	Death by suicide	Primary data is sourced through a survey. Secondary data is sourced from the Crime Statistics Unit of the Fiji Police Force. The measure is the response noted in the survey	Medium	1247 participants	Indo Fijian, Indigenous Fijian, and other ethnic groups	NA	The majority of the cases reported were Indo Fijian	Age: NA Gender: Male	Colonisation, globalisation	Hanging
Pridmore et al., 1996	Whole of Fiji	Case series	Death by suicide	Secondary data is sourced from medical records. The measure is the number of autopsy cases noted in the medical record	Medium	304 autopsies	Indo Fijian and Indigenous Fijian	NA	The majority of the cases reported were Indo-Fijian	Age: 31 years Gender: no significant difference was identified	Cultural factors	Hanging

Author	Study Location	Study Design	Study Focus	Study Data and Measures	Study Quality	Study Sample Size	Focused Ethnicity	Focused Age and Gender	Finding of Ethnicity	Finding of Age and Gender	Finding of Risk Factors	Finding of Methods
Booth, 1998	Pacific Islands	Case series	Death by suicide	Secondary data is sourced from police statistics of Fiji, 1982-1983. The measure is the number of suicide cases noted in the Fiji police record	Medium	166 deaths by suicide cases	NA	Children and Youth in Fiji	NA	Age: 15-24 years Gender: Male	Social stress	NA
Booth, 1999	Pacific Islands	Case series	Death by suicide	Secondary data is sourced from records of health, police, and vital registration authorities. The measure is the number of suicide deaths noted in the police record	Medium	NA	Indo Fijian	NA	NA	Age:15-24 years Gender: Female youth	Rural background, Hindu religion	Hanging, paraquat poisoning
Aghanwa, 2000	Suva in Rewa Province	Case-control study	Attempted suicide	Primary data is sourced from interviewing attempted suicide patients. Psychiatric morbidity was measured using ICD-10	Medium	39 cases	Indo Fijian and Indigenous Fijian	NA	The majority of the cases reported were Indo Fijian	Age:16-25 years Gender: Female	Social difficulties, psychiatric morbidity	Ingestion of medical prescribed drugs, pesticides
Chang, 2000	Whole of Fiji	Case report	Death by suicide and attempted suicide	Secondary data is sourced from Police records and the existing literature. The measure is the number of deaths by suicide and attempted suicide cases noted in the police record	Medium	NA	Indo Fijian and Indigenous Fijian	NA	The majority of the cases reported were Indo Fijian	Age: 20-24 years Gender: Male	Cultural factors such as single-family units, Hindu religion, urban background	Hanging, paraquat poisoning

Author	Study Location	Study Design	Study Focus	Study Data and Measures	Study Quality	Study Sample Size	Focused Ethnicity	Focused Age and Gender	Finding of Ethnicity	Finding of Age and Gender	Finding of Risk Factors	Finding of Methods
Morris & Maniam, 2000	Whole of Fiji	Narrative literature review	Death by suicide	Secondary data is sourced from previous literature. The measure is the number of suicide cases noted in the previous literature	Low	NA	NA		The majority of the studies reported were Indo Fijian	Age: 15-30 years Gender: Female	Hindu religion, migrant status, rural residency	Paraquat poisoning
Aghanwa, 2001	Suva in Rewa province	Case series	Attempted suicide	Secondary data is sourced from the psychiatric register of the medical records. The measure is the number of attempted suicide cases noted in the medical record	Medium	31 drug overdose self-poisoning cases compared with 27 non-overdose self-poisoning cases	Indo Fijian and Indigenous Fijian	Child = 5-14 years; youth = 15-24 years	The majority of the cases reported were Indo Fijian	Age: Deliberate self-harm, mean age 26.1; poison ingestion, mean age 22 Gender: Female	Social problem for drug overdose, Psychiatric disorder for poison ingestion	Drug overdose
Adinkrah, 2003	Whole of Fiji	Case series	Death by suicide	Secondary data is sourced from the Fiji Police Force and newspapers. The measure is the number of homicide suicide cases noted in the Murder and Manslaughter Register of the Fiji Police Force	Medium	10 cases	Indo Fijian and Indigenous Fijian	NA	The majority of the cases reported were Indo Fijian	Age: NA Gender: no significant difference was identified	Inharmonious marital relationship, rejection of marriage proposal	Hanging, burning

Author	Study Location	Study Design	Study Focus	Study Data and Measures	Study Quality	Study Sample Size	Focused Ethnicity	Focused Age and Gender	Finding of Ethnicity	Finding of Age and Gender	Finding of Risk Factors	Finding of Methods
Aghanwa, 2004	Whole of Fiji	Case series	Attempted suicide	Secondary data is sourced from the medical record. The measure is the number of cases noted in the medical record	Medium	128 cases	Indo Fijian and Indigenous Fijian	NA	The majority of the cases reported were Indo Fijian	Age: Male age 25, female age 23 Gender: High in Female	Neurosis depression, marital issues for females. Depression, neurosis, stress, alcohol misuse, and severe psychiatric morbidity for males	Drug overdose
Roberts et al., 2007	Western Viti Levu	Case report	Attempted suicide	Secondary data is sourced from an NGO. The measure is the number of cases noted in the counselling record of the NGO	Medium	132 cases	Indo Fijian, Indigenous Fijian, European ancestry, Chinese, Rotuman, and Other Pacific territories.	NA	The majority of the cases reported were Indo Fijian	Age: Under 32 years Gender: Female	Social stress	NA

Author	Study Location	Study Design	Study Focus	Study Data and Measures	Study Quality	Study Sample Size	Focused Ethnicity	Focused Age and Gender	Finding of Ethnicity	Finding of Age and Gender	Finding of Risk Factors	Finding of Methods
Forster et al., 2007	Whole of Fiji	Narrative review of literature	Death by suicide	Secondary data is sourced from previous literature. The measure is the number of cases noted in the previous literature	Low	NA	NA	NA	The majority of the studies reported were Indo Fijian	Age: NA Gender: Female	Social factors such as colonisation and globalisation	NA
De Leo et al., 2009	Western Pacific countries, which includes Fiji	Case series	Death by suicide	Secondary data is sourced from the Fiji Crime Statistical Unit and the Secretariat of the South Pacific. The measure is the fatal and non-fatal suicidal behaviour noted in the police record	Medium	NA	NA	NA	The majority of the cases reported were Indo Fijian	Age:15-24 years Gender: Male	NA	Hanging
Henson et al., 2012	Whole of Fiji	Case-control study	Attempted suicide	Secondary data is sourced from an NGO. The measure is the number of attempted suicide patients referred for counselling	High	5581 cases	Indo Fijian and Indigenous Fijian	NA	The majority of the cases reported were Indo Fijian	Age: 29 years Gender: Male	Interpersonal conflict, identity crises, financial loss, and low self-control	Intentional self-poisoning
Nafiza et al., 2012	Rakiraki in Ra province	Case series	Death by suicide and attempted suicide	Secondary data is sourced from medical and police records. The measure is the number of cases noted in the medical and police record	Medium	16 attempted suicide cases and 20 suicide cases	Indo Fijian and Indigenous Fijian	NA	The majority of the cases reported were Indo Fijian	Age: 15-24 years Gender: Female: attempted suicide,	Rural background	Hanging, paraquat poisoning, and drug overdose

Author	Study Location	Study Design	Study Focus	Study Data and Measures	Study Quality	Study Sample Size	Focused Ethnicity	Focused Age and Gender	Finding of Ethnicity	Finding of Age and Gender	Finding of Risk Factors	Finding of Methods
										Male: suicide		
Peiris et al., 2012	Viti Levu Island of Fiji	Case series	Death by suicide and attempted suicide	Secondary data is sourced from the Fiji injury surveillance database. The measure is the number of poisonings and acute injury incidences noted in the Fiji injury surveillance	Medium	17 deaths by poisoning cases, and 157 non-fatal cases	Indo Fijian, Indigenous Fijian, European ancestry, Chinese, Rotuman, and Other Pacific territories	NA	The majority of the cases reported were Indo Fijian	Age: 15-29 years Gender: Female	Conflicting situation	Ingestion of chemicals, drugs, and pesticides.
De Leo et al., 2013	Areas that fall under the Suicide Trends in At-Risk areas (START) study which includes Fiji.	Case series	Death by suicide	Secondary data is sourced from the Fiji suicide databank. Measure is ICD-10	Medium	NA	NA	NA	NA	Age: 24-37 years Gender: Suicide: male= female, Attempted suicide: female >male	NA	Chemicals/ agricultural pesticides

Author	Study Location	Study Design	Study Focus	Study Data and Measures	Study Quality	Study Sample Size	Focused Ethnicity	Focused Age and Gender	Finding of Ethnicity	Finding of Age and Gender	Finding of Risk Factors	Finding of Methods
Lal et al., 2016	Nadi in Ba province	Case series	Death by suicide and attempted suicide	Secondary data is sourced from medical and police records. The measure is the number of cases noted in the medical and police record	Medium	134 cases	Indo Fijian and Indigenous Fijian	NA	The majority of the cases reported were Indo Fijian	Age: 20-29 years Gender: Suicide = male, attempted suicide = female	NA	Hanging and chemical ingestion
Marshall et al., 2016	Whole of Fiji	Systematic literature review	Death by suicide	Secondary data is sourced from previous literature. The measure is the number of cases noted in the previous literature	Medium	12 studies	Indo Fijian and Indigenous Fijian	NA	The majority of the cases reported were Indo Fijian	Age: 15-29 years Gender: Suicide = male attempted suicide = female	NA	Hanging, chemicals, and pesticides such as paraquat poisoning
Mazaba et al., 2017	Whole of Fiji	Cross-sectional study	Suicide ideation	Primary data is sourced from school-going adolescents in Fiji. The measure is the response to a survey	Medium	1673 students	NA	13-15 years	NA	Age: 14 years Gender: Female	Food security, anxiety, loneliness, bullying, fights, cigarette smoking, alcohol use	NA

Author	Study Location	Study Design	Study Focus	Study Data and Measures	Study Quality	Study Sample Size	Focused Ethnicity	Focused Age and Gender	Finding of Ethnicity	Finding of Age and Gender	Finding of Risk Factors	Finding of Methods
Muertigue & Naiker, 2018	Whole of Fiji	Cross-sectional study	Death by suicide and suicide ideation	Primary data is sourced from University of Fiji students. The measure is the response to a survey	Low	20 students	NA	NA	NA	Age: 19-21years Gender: Female	Financial issues, family and relationship issues, social factors, poor academic performance	NA
Mathieu et al., 2021	Pacific Islands	Systematic literature review	Death by suicide and attempted suicide	Secondary data is sourced from previous literature. The measure is the number of cases noted in the previous literature	High	36 papers	NA	NA	The majority of the cases reported were Indo Fijian	Age: NA Gender: Female	Rural background, family issues	Hanging and self-poisoning

Note. NA in the table refers to Not Available

3.1.2. Study Design

As shown in Table 2, the majority of studies were retrospective case series studies (*n* = 18). Of the remaining 12 studies, 5 were reviews of literature, of which 3 were systematic literature reviews (Marshall et al., 2016; Mathieu et al., 2021; Morris & Maniam, 2000), and 2 were narrative reviews of literature (Forster et al., 2007; Haynes, 1987); 3 were cross-sectional survey studies (Adinkrah & Chand, 1996; Mazaba et al., 2017; Muertigue & Naiker, 2018); 2 were case reports (Chang, 2000; Roberts et al., 2007); and 2 were case-control studies (Aghanwa, 2000; Henson et al., 2012).

3.1.3. Study Quality

In terms of quality, most studies were of medium quality (*n* = 23), with a small number being of either high (*n* = 3) or low (*n* = 4) quality. Of the 4 low-quality studies, 2 were narrative reviews of the literature (Forster et al., 2007; Haynes, 1987), one was a systematic literature review (Morris & Maniam, 2000), and one was a cross-sectional survey study (Muertigue & Naiker, 2018). The most common issues with the low-quality literature studies were unclear review questions, unclear inclusion and exclusion criteria, and problematic search strategies such as the search strings being limited in their ability to identify relevant literature. The low-quality cross-sectional survey study lacked clarity relating to sample characteristics such as unclear participant numbers, gender, and ethnicity information. The majority of the medium-quality studies were case series studies, and the primary issue was a failure to indicate the sample size. Of the three high-quality studies, two were case-control studies (Aghanwa, 2000; Henson et al., 2012) and a systematic literature review (Mathieu et al., 2021).

3.1.4. Year of Publication

From the included literature, suicide and suicidality research in Fiji appears to have been undertaken during two time periods. These are research conducted and published from

1971 to 1987 and then research conducted and published post 1994. The first study included in this review was conducted in 1971 (Ree, 1971) and the last in 2021 (Mathieu et al., 2021). From 1971 to 1975 there were only three studies that were conducted (Karim & Price, 1973; Price & Karim, 1975; Ree, 1971). After 1975 another three studies were conducted between 1984 and 1987 (Haynes, 1984; Haynes, 1987; Lal, 1985). From 1994 onwards the majority of studies (*n* = 24) have been conducted and published.

Until 1999, the focus of all studies was death by suicide. It was only after 2000, that studies began focusing on other concepts of suicidality such as attempted suicide, suicidal ideation, or suicidal behaviours. For example, the first study on attempted suicide was conducted and published in 2000 (Aghanwa, 2000). A shift in the type of study design utilised across the years has been identified. Most of the studies before 2000 were case series studies (*n* = 18), however from 2000 onwards, case control studies, case reports and more cross-sectional survey studies and reviews of the literature have emerged.

3.1.5. Study Data and Measures

In terms of data, most studies (*n* = 26) have used secondary data from police records (*n* = 6), medical records (*n* = 7), or a combination of both (*n* =4). Some have used secondary data from previous literature reviews (*n* = 5), Non-Government organisation counselling records (*n* = 2), Indian immigrant records (*n* = 1), and Fiji suicide databank records (*n* = 1). Breaking the secondary data down further, most (*n* = 14) were associated with death by suicide focused studies where death by suicide was mentioned in a police or medical record (Adinkrah, 2003; Booth, 1998; Booth, 1999; Chang, 2000; De Leo et al., 2013; Haynes, 1984; Karim & Price, 1973; Lal et al., 2016; Nafiza et al., 2012; Peiris et al., 2012; Price & Karim, 1975; Pridmore & Couper, 1996; Pridmore & Ryan, 1994; Ree, 1971). These studies note that suicide was mentioned as the cause of death in the record. Out of the five studies that examined attempted suicide, four studies utilised secondary data from medical records

where attempted suicide was mentioned in the document (Aghanwa, 2001; 2004; Henson et al., 2012; Roberts et al., 2007).

Out of all 30 studies, only four used primary data, and this was collected via face- to-face surveys (Adinkrah & Chand, 1996; Mazaba et al., 2017; Muertigue & Naiker, 2018) or via interview (Aghanwa, 2000). Adinkrah and Chand (1996) conducted a nationwide survey (*N* = 1247 participants aged 18 years and older) and also collected qualitative data from interviews with medical practitioners and religious leaders to identify public attitudes towards suicide. Mazaba et al. (2017) and Muertigue (2018) measured suicide ideation using questionnaires. Mazaba et al. (2017) analysed secondary data obtained from the 2010 Fiji Global School-Based Health Survey. This survey was conducted using a questionnaire that included sections on alcohol use, dietary behaviours, mental health, physical activity, sexual behaviour, tobacco use, and violence. Suicide ideation was measured using one question: "During the past 12 months, did you ever seriously consider attempting suicide?'' The Muertigue (2018) study used modified questions from the Suicidal Ideation Questionnaire (Reynolds, 1987) to identify reasons why university students develop suicidal ideation. However, the information offered about how they modified this questionnaire is minimal, only noting that it included both close-ended and open-ended questions to obtain qualitative and quantitative data on students' perceived factors leading to suicide ideation. Aghanwa (2000) measured attempted suicide by interviewing those patients admitted to the hospital for attempting suicide. Psychiatric morbidity was evaluated and, when identified, diagnosed using the International Classification of Diseases (Hasin et al., 2006). The social factors leading to suicidal behaviour were explored, along with comparing the sociodemographic and clinical characteristics of those patients who attempted suicide and other patients seen in the psychiatric ward to determine their characteristics.

3.1.6. Study Location

The majority of studies (n = 20) examined suicidality across Fiji. In terms of the remaining 10 studies, these studies examined suicidality in a small number of provinces, such as Ba, Kadavu, Macuata, Nadroga-Navosa, Ra, and Rewa.

To sum up the characteristics of the included studies, the majority of the studies were retrospective case series designs with a small number of cross-sectional studies, case-control studies, case reports, and reviews of literature. There appear to be two research periods: 1971-1987, and post-1994. Before 1999, the focus of all studies was on death by suicide, and most studies utilised secondary data sources. The majority of the studies examined suicide across Fiji.

3.2. Sample Characteristics of the Included Studies

3.2.1. Sample Size

Sample sizes varied across the 30 studies, from 10 homicide-suicide cases (Adinkrah, 2003) to 5581 counselling cases (Henson et al., 2012). As shown in Table 2, sample sizes varied substantially in terms of the number of cases in the case series studies, the number of participants in the cross-sectional studies, the case report, the case-control studies, and the number of included studies in the literature reviews. The sample size in seven of the case studies ranged from 10 (Adinkrah, 2003) to 90 (Aghanwa, 2001; Haynes, 1984; Karim & Price, 1973; Nafiza et al., 2012; Price & Karim, 1975; Ree, 1971) cases. Six case studies had large sample sizes ranging from 128 to 304 cases (Aghanwa, 2004; Booth, 1998; Lal, 1985; Lal et al., 2016; Peiris et al., 2012; Pridmore & Couper, 1996), with five case studies not specifically mentioning sample size (Booth, 1999; De Leo et al., 2009; De Leo et al., 2013; Pridmore & Ryan, 1994; Pridmore et al., 1995). The case-control study by Henson et al. (2012) consisted of 5581 counselling cases, making this the largest case study. The next two

largest participant/case study numbers were two surveys by Adinkrah and Chand (1996), which consisted of 1247 participants, and Mazaba et al. (2017), where 1673 participants participated in their study. Out of the 5 reviews of literature, 3 reviews of literature (Forster et al., 2007; Haynes, 1987; Morris & Maniam, 2000) did not mention the number of studies they included. These three reviews of the literature were 2 narrative reviews of the literature (Forster et al., 2007; Haynes, 1987) and one systematic literature review (Morris & Maniam, 2000). Other 2 reviews of literature included 12 (Marshall et al., 2016) and 36 studies (Mathieu et al., 2021) and they were both systematic literature reviews.

3.2.2. Ethnicity

Of the studies that included ethnicity information about participants or cases (n = 22), the majority (n = 14) reported differences in suicide or attempted suicide rates between Indo-Fijians and Indigenous Fijians. Only 5 studies (Adinkrah, 1996; Karim & Price, 1973; Peiris et al., 2012; Price & Karim, 1975; Roberts et al., 2007) included participants or cases from other ethnic groups. These ethnic groups are Chinese, Filipinos, people of European ancestry, Rotumans, and people from other Pacific territories, along with Indo Fijian and Indigenous Fijian. There were three studies that only included Indo Fijian participants (Booth, 1999; Haynes, 1987; Lal, 1985). Of these 22 studies, 8 studies did not clearly indicate the ethnicity of participants or cases (Booth, 1998; De Leo et al., 2009; De Leo et al., 2013; Forster, 2007; Mathieu et al., 2021; Mazaba et al., 2017; Morris & Maniam, 2000; Muertigue & Naiker, 2018).

3.2.3. Age and Gender

As most studies were case series, the focus was not on a specific age group or gender. Of the three studies that focus specifically, one study reviewed the suicide rate in children aged between 5 and 14 years and youth aged between 15 and 24 years (Booth, 1998), whereas Mazaba et al. (2017) studied suicidal ideation among adolescents aged 13–15 years.

Regarding gender, the only gender-specific study was conducted by Aghanwa (2004), which was a case series study of 128 attempted suicide cases showing that 88 cases were females and 40 cases were males.

In summation, the sample size of the included studies varied from 10 homicide suicide cases to 5581 counselling cases. The majority of the studies reported differences in suicide or attempted suicide rates between Indo Fijians and Indigenous Fijians. Only five studies looked at the suicide rate of other ethnicities. Regarding age and gender, apart from three studies, other studies did not focus on any specific age group or gender since the majority of the studies were case series. There was only one gender-specific study.

3.3. Findings

The key findings from the included studies were differences in suicide or suicidality in terms of ethnicity, age group, gender, the identification of risk factors, or the noting of common suicide methods (see Table 2).

3.3.1. Ethnicity

Of the 30 studies, 26 reported an ethnic difference finding in relation to suicide or suicidal behaviour. Across all of these studies, the majority of the reported suicide or suicidal behaviour cases were Indo Fijians. This finding held constant from the first study by Ree (1971) to the last study by Mathieu et al. (2021). Although Chinese, Filipinos, Europeans, and others make up about 5% of the total Fijian population, only five studies (Adinkrah, 1996; Karim & Price, 1973; Peiris et al., 2012; Price & Karim, 1975; Roberts et al., 2007) considered the number of suicide or attempted suicide cases amongst these ethnic groups, which was found to be low. For example, Price and Karim (1975) reported that out of the 90 deaths by suicide cases, 82 (91.1%) were Indo Fijians, 6 (6.7%) were Indigenous Fijians, and 2 (2.2%) were other ethnic groups. Similarly, Roberts et al. (2007) found that out of 132

attempted suicide cases, 119 cases (90%) were Indo Fijians, 9 cases (7%) were Indigenous Fijians, and only 4 cases (3%) were other ethnic groups. Peiris et al. (2012) identified that out of 17 deaths by poisoning suicide cases, Indo Fijians accounted for 13 deaths and Indigenous Fijians for 4 deaths, none from the other ethnic groups.

3.3.2. Age and Gender

Studies have found that the age group most at risk of engaging in suicidal behaviours is 15 to 30-year-olds. Of the three studies that focused on a particular age group, such as Booth (1988), who examined children aged 5 to 14 years and youths aged 15 to 24 years suicide rates, most of the cases fell between the age range of 15 and 24 years. Mazaba et al. (2017) looked at suicidal ideation amongst adolescents attending school (age range 13 to 15 years) and found that 14-year-old students were more likely to report having experienced thoughts of suicide in the past 12 months when compared to other age groups. Muertigue et al. (2018) examined risk factors, as perceived by university students (age range 16 to 21 years), that could lead them to suicide or suicidality. The authors identified that students between the age group of 19 and 21 years were perceived to be more suicidal compared to other age groups.

Of the included studies, 18 reported a higher rate of suicide and attempted suicide amongst females compared to males. Similarly to ethnicity differences, this finding has been consistently reported from early studies (see Ree, 1971) up to more recent studies (Muertigue & Naiker, 2018). However, there were studies where higher suicide rates were found for males compared to females. Lal (1985) found that males of Indian origin had a higher number of suicide cases compared to Indo Fijian females. This gender change was also found in some later studies, such as Adinkrah and Chand (1996), Booth (1998), Chang (2000), and De Leo et al. (2009) where Indo Fijian males reported higher numbers of deaths by suicide than Indo Fijian females. Studies that have looked at attempted suicide (Aghanwa, 2000; 2001; 2004;

Henson, 2012; Roberts et al., 2007) have consistently found that Indo Fijian females have higher rates of attempted suicide than Indo Fijian males. Only one study by Henson (2012) found that the number of suicide attempts for Indo Fijian males compared to Indo Fijian females was higher.

When looking at the intersection of age and gender, Haynes (1984) and Lal et al. (2016) have reported that males above the age of 30 are at higher risk of death by suicide, whereas females below the age of 30 are at higher risk of attempting suicide. However, gender differences have not been reported in all studies, with no difference being reported in the Adinkrah (2003) and Pridmore et al. (1996) studies.

3.3.3. Risk Factors

Out of the 30 included studies, 26 reported risk factors associated with death by suicide, attempted suicide, or suicidal ideation. Studies that looked at death by suicide identified that a rural agricultural background (Booth, 1999; Haynes, 1987; Nafiza et al., 2012), Hinduism (Chang, 2000; Haynes, 1987; Lal, 1985), and exposure to interpersonal conflicts, such as family disputes (Haynes, 1987; Henson et al., 2012), or domestic violence (Pridmore et al., 1994; Pridmore et al., 1995), were identifiable risk factors. Some studies have identified psychosocial factors such as globalisation and colonisation (Adinkrah, 1996; Forster et al., 2009), social stress (Booth, 1998; Roberts et al., 2007), migrant status (Morris & Maniam, 2000), being married (Haynes, 1984; Ree, 1971), and financial difficulty (Henson et al., 2012; Muertigue & Naiker, 2018) as risk factors for death by suicide. While rural background has been identified as a risk factor in several studies, Chang (2000) found that urban living and the single-family structure were risk factors associated with death by suicide. Lal (1985) identified sexual jealousy as a risk factor among Indo Fijian males.

About the five studies that looked at attempted suicide, the three sequential studies by Aghanwa identified psychosocial risk factors, although these were different risk factors from those associated with death by suicide. These were social difficulties such as lack of employment outside the home and mental health issues such as neuroses (Aghanwa, 2000; 2001; 2004), stress-related disorders, and depression (Aghanwa, 2004). Robert et al. (2007) identified social stress as the risk factor; however, the authors did not specifically define social stress. Another study by Henson et al. (2012) identified interpersonal conflicts, identity crises, financial loss, and low self-control as risk factors.

Studies that looked at suicidal ideation identified financial issues such as mismanagement of study allowances, family issues such as family conflicts or misunderstanding among the family members, and relationship issues such as breakups in a romantic relationship as the more commonly reported factors for the formation of suicidal ideation (Muertigue & Naiker, 2018). These issues were also one of the factors identified for death by suicide. Apart from these, anxiety, loneliness, substance abuse, being bullied or attacked, cigarette smoking, and alcohol use have also been identified as risk factors for suicidal ideation (Mazaba et al., 2017).

3.3.4. Suicide Method

For those studies (n = 17) that focused on death by suicide or the method of suicide, hanging was identified as the most common method (n = 15). This was a consistent finding, regardless of when the study was conducted. From 1979 onwards, the use of chemical pesticides as a death by suicide method (e.g., paraquat poisoning) was the second most common method. One study identified setting oneself on fire as a method used for suicide (Adinkrah, 2003). In addition, studies that looked at attempted suicidal behaviour identified overdoses of prescribed drugs such as paracetamol and the use of pesticides such as paraquat as the most commonly used methods (Aghanwa, 2000; 2001; 2004; Henson et al., 2012).

Based on this, it appears that hanging and paraquat poisoning were the two most commonly seen methods of suicide and attempted suicide.

To sum up, the majority of the studies reported a high number of suicide or suicidal behaviour cases among Indo Fijians. The age range between 15 and 30 years appears to be at elevated risk of engaging in suicidal behaviour. Females compared to males are reported to have a higher suicide rate across the majority of the studies. The risk factors for death by suicide were living in a rural agricultural background, Hinduism, exposure to interpersonal conflicts or domestic violence, globalisation and colonisation, social stress, migrant status, being married, and financial difficulties. Social difficulties, mental health issues, stress-related disorders, and depression are major risk factors reported for attempting suicide. Data considering suicidal ideation identified financial issues, family issues, or relationship issues as the most common risk factors. About the common method used for suicide and suicidality, hanging was reported to be the most prevalent in the majority of the studies, followed by the use of chemical pesticides such as paraquat poisoning.

CHAPTER 4: DISCUSSION AND CONCLUSION

This scoping review identified 30 relevant studies that have focused on suicide or suicidality in Fiji for synthesis. Considering that suicide has been presented as one of the major social issues for Fiji, particularly for the Indo Fijian community (Mathieu et al., 2021), the number of studies conducted to date is not adequate to be able to draw a clear picture of the trends and patterns of suicide and suicidality in Fiji that extends beyond Indo Fijians and young women. Most included studies were conducted some time ago, raising questions about their relevance for today's Fiji. For example, the first study (Ree, 1971) included in this review was conducted 52 years ago. As trends and patterns of suicide and suicidal behaviour change over time, what was found in 1971, 2000 or 2010 may no longer hold in 2023. Since the existing reviews are no longer current, particularly in consideration of trends and patterns of suicide in contemporary times, they do not have the capacity to support the development of current suicide prevention and intervention strategies. Recent evidence of existing suicide trends and patterns is needed to support evidence-based suicide prevention and intervention approaches that need to be based on current evidence. Not on evidence that is based on research conducted at a time when suicide was treated differently in Fiji. Findings from this present review have the potential to support intervention development since they include evidence of present trends and patterns of suicide in Fiji. The future research that will be based on the contemporary evidence from this review will have the potential to provide valuable insights into the current risk factors for suicide and suicidal behaviour in Fiji. These new insights can support the development of suicide prevention and intervention measures. Additionally, this scoping review identified gaps in the existing literature to highlight areas that require more in-depth investigation and to provide a direction on which future research might need to focus.

4.1. Unique Findings

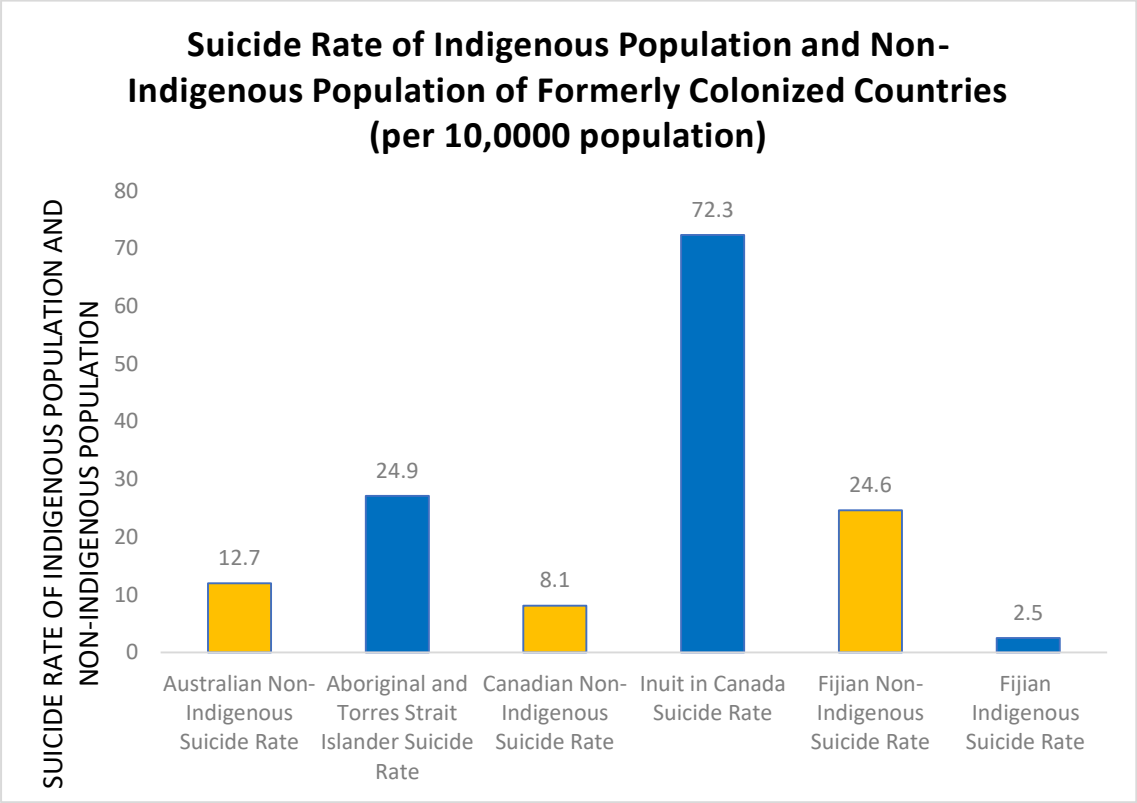
This review identified some unique characteristics of suicide and suicidality in Fiji relating to ethnicity, age, and gender. It appears that something different may be happening in Fiji regarding suicide and suicidality when compared to other formerly colonised countries and Pacific nations.

4.1.1. Ethnicity

The included studies in this scoping review consistently highlighted the high rate of suicide and suicidality among the non Indigenous Fijian population compared to the Indigenous Fijian population (Marshall et al., 2016; Mathieu et al., 2021; Ree, 1971). This is a unique and strong finding that appeared in all the included studies. When we consider the suicide rate of the Indigenous population in other colonised countries, the suicide rate of the Indigenous population is typically found to be much higher compared to the non Indigenous population. For example, in Australia, the recently reported suicide rate for Aboriginal and Torres Strait Islanders is 24.9 per 100,000 population compared to the non Indigenous suicide rate of 12.7 per 100,000 population (Australian Institute of Health and Welfare [AIHW], 2022). The Indigenous suicide rate of the Inuit in Canada is 72.3 per 100,000 population, compared to the national suicide rate of 8.1 per 100,000 population (Statistics Canada, 2019). See Figure 4 for a comparison of Indigenous and non Indigenous suicide rates across Australia, Canada, and Fiji.

Figure 4

Indigenous and Non Indigenous Suicide Rate of Formerly Colonised Countries



Note. Data sourced from **the** Australian Institute of Health and Welfare. (2022); Suicide and self-harm monitoring; Statistics Canada. (2019); Marshall, A., Hestla, G., Chang, O., Andrews, A., & Person, A. C. (2016). Characteristics of Suicide in Fiji: An updated review of the literature: *Fiji Journal of Public Health*, *5*, 16–19.

The Indigenous suicide rate in other colonised countries suggests something different may be occurring in Fiji with regard to ethnic group differences in terms of death by suicide. Some of the included studies in this review suggest that, compared to the Indigenous Fijians, who live in villages with close-knit families and can receive support from the community in times of crisis, Indo Fijians live primarily in single-family structures (Chang, 2000; Price & Karim, 1975). Additionally, since Indo Fijians were originally from India, they may lack a sense of belongingness to Fiji, along with feeling of insecurity as an outsider (Naidu et al., 2013). Historically, the political unrest in Fiji has been found to have left many Indo Fijians with fear and uncertainty about their future and their place in Fiji (Trnka, 2011). This may be a contributing factor of suicidality among the Indo Fijian community, where one feels an outsider in one's place of birth. Additionally, another factor that may be relevant about the high suicide rate of the Indo Fijians is the disconnection from cultural ties. Dudgeon et al. (2021) stated that a healthy and strong connection with family and relatives lowers the risk of suicide and suicidal behaviour. The more disconnected an individual is from their culture, language, and ancestral relations, the higher the risk is for suicide and suicidal behaviour. The Indo Fijians in Fiji who are originally from India, may have little ancestral connection, in terms of close connection with relatives and other family members in India (Voigt-Graf, 2008). This is in comparison to the Indigenous Fijians who are typically closely connected with their extended family, culture, language, and ancestral links (Naidu et al., 2013). This disconnection from one's place of birth or cultural ties may be a factor leading to a high rate of suicide and suicidality among the Indo Fijians in Fiji and should be investigated in future studies.

4.1.2. Age and Gender

A majority of the recent studies in this review reported that Indo Fijian females between the ages of 15 to 30 years have an elevated risk for suicide and suicidal behaviour.

Although a few earlier studies did report older males of 30 years and above had a higher risk for suicide and suicidal behaviour. This is significant since, in many other countries, such as Australia and New Zealand, males are more at risk of suicide than women (Barak et al., 2020; Klein et al., 2023). Moreover, in all other Western Pacific countries except Fiji and Western Samoa, older males of 30 years and above are more likely to take their own lives than females (Mathieu et al., 2021).

For married Indo Fijian women who do not receive support from family, situations such as conflicts, or any other interpersonal issues with spouses or in-laws, isolation and loneliness may escalate feelings of emotional pain, along with the feeling of hopelessness and burdensomeness. In Indian culture, there is significant pressure from a woman's family and from society to stay married, regardless of the circumstances of her marriage (Sharma et al., 2013). According to Malik and Malik (2022), the culture of offering dowry (gifts of money, jewellery, and properties) to the son-in-law and his family by the bride's father in India has been a custom to ensure that the daughter is treated well by the groom and his family after marriage. Failure of the bride's father to fulfil the demands of the groom and his family often leads to physical and emotional abuse of the bride. Dandona et al. (2022), in their study, mentioned that many suicide cases of Indian married women are linked to unfulfilled dowry demands. It is unknown if the dowry system prevails among the Indo Fijian community in Fiji similarly to India, and if it is how it may be related to suicide and suicidal behaviour. The studies that identified domestic violence or interpersonal conflicts as suicide risk factors did not go further to investigate the reasons for this violence or conflicts and whether they have a gendered aspect to them. Thus future research is required that focuses specifically on identifying the risk factors relating to suicide and suicidality amongst Indo Fijian females.

4.2. Gaps in the Existing Literature

This review has also identified gaps in the existing literature that warrant additional investigations and may form the basis of a subsequent study in the future.

4.2.1. Lack of Age and Gender Specific Study

Given the scarcity of gender-specific suicide studies in Fiji, with only one gender-specific study conducted to date (Aghanwa, 2001), a more recent gender specific study is required to better understand the relationship between gender and suicide in Fiji. Extending beyond gender, to diverse genders and sexualities, and despite the large number of communities in Fiji representing lesbian, gay, bisexual, and transgender (LGBTQ+) people (Presterudstuen, 2019), none of the included studies focused on suicide and suicidality in these communities. What this means is that the suicide rate of the LGBTQ+ communities in Fiji remains unknown. This is concerning given in other countries, the rate of suicide and suicidal behaviours in these communities is significantly high (Lyons et al., 2022).

Of the 30 included studies, only three focused on a particular age group, these being children and youth, school-going adolescents, and college students (Booth, 1998; Mazaba et al., 2017; Muertigue & Naiker, 2018). Considering that the suicide rate among younger age groups in Pacific island countries has high (Mathieu et al., 2021), there is a need to conduct more recent studies that focus on younger age groups to identify age-specific risk factors. This is not just confined to younger age groups. There is also a lack of age-specific studies focusing on suicide and suicidal behaviours in older Fijians. Looking at countries, such as Australia and New Zealand, older age groups are reportedly at higher risk for suicide than younger age groups (Barak et al., 2020; Klein et al., 2023). It is not clear if this is similar in Fiji, thus there is a need to see if this also holds in Fiji.

4.2.2. Lack of Focus on Other Ethnic Groups

Aside from the five included studies (Adinkrah, 1996; Karim & Price, 1973; Peiris et al., 2012; Price & Karim, 1975; Robert et al., 2007), which reported on the suicide rate of other ethnic groups, all other included studies have focused on Indo Fijians and the Indigenous Fijians. This is perhaps understandable, given they are the dominant ethnic groups. The last study which looked at the suicide rate of the other ethnic groups was conducted in 2012 (Peiris et al., 2012). Though these ethnic groups consist of only about 5% of the total population of Fiji, there is no recent data regarding suicide and suicidality in these groups. Therefore, there is a need for a more recent study that provides an up-to-date understanding of these minority ethnic groups.

4.2.3. Limited Focus on Different Suicide Concepts

It appears that the majority of the included studies on suicide and suicidality in Fiji focused on death by suicide. This is unusual when considering suicide research in other countries, where the focus is on a combination of suicide concepts (Large et al., 2021). Focusing on a singular suicide concept offers a limited understanding of suicide and suicidal behaviour and it also results in repetitive and, unproductive findings. Moreover, suicide is a relatively rare event, and by focusing on the endpoint and the rare event what is missed is understanding how one progresses to make a suicide attempt or the distress one feels when one has thoughts of suicide. Therefore, this created a significant gap in understanding as to why an individual in Fiji with suicidal ideation would progress to a suicide attempt. Interestingly, despite the association between impulsivity and suicide (Brokke et al., 2022), the current study's search did not identify any research that either focused on or included impulsive suicides. The absence of impulsivity in Fijian research suggests that future research should investigate the relationship between impulsivity and suicide in non-Western countries.

4.2.4. Limited Study Designs

It is therefore not surprising that the majority of the included studies were retrospective case series as they are best suited for studying the number of deaths by suicide or attempted suicide. There was a significant lack of other study designs, such as cohort studies, case-control studies, cross-sectional studies, or epidemiological studies, which could focus on other suicide concepts and thus provide a broader perspective on suicide. For example, a qualitative study on the individual's experience of progressing from suicidal thoughts to suicidal action could provide insight into the risk factors for suicidal behaviour, and a comparative study between urban and rural suicide rates could allow an understanding of suicide risk areas in Fiji. Utilising different study designs is essential to better understanding suicide and suicidality in Fiji. Focusing only on retrospective studies prevents suicide research in Fiji from moving forward to better consider the actual risk factors.

4.2.5. Limited Data Source

Moreover, apart from a small number of studies that utilised primary data sources by conducting a survey or an interview (Adinkrah & Chand, 1996; Aghanwa, 2000; Mazaba et al., 2017; Muertigue & Naiker, 2018), the majority of other studies utilised secondary data from limited sources, which are either from a police record, medical record, or a combination of both (Lal et al., 2016; Nafiza et al., 2012; Peiris et al., 2012). Utilising secondary data from limited data sources provides limited information which is not adequate to clearly understand suicide and suicidality in Fiji. Therefore, a study focusing on the combination of suicide concepts such as death by suicide and suicidal ideation, utilising primary data sources is required.

4.2.6. Limited Suicide Risk Factor

In the majority of the studies, the high rate of suicide among the Indo Fijian community in Fiji was attributed to the Hindu religion. Fiji is considered a highly religious

nation with the majority of the population following either Christianity or Hinduism (Willard, 2018). Rather than considering religion as a protective factor, Hinduism was reported to be a risk factor in several studies (see Booth, 1999; Chang, 2000; Haynes, 1987; Lal, 1985; Morris & Maniam, 2000). As mentioned earlier, suicide is not always considered a sin in Hinduism. For example in ancient times, suicide was occasionally permitted for special purposes, such as Sati, which was a ritual in ancient India where a Hindu widow could self-immolate over the funeral pyre of her husband (Vijayakumar & John, 2018). Hinduism cannot be regarded as the risk factor for suicidal behaviour instead as stated by Vijayakumar and John (2018), a strong faith in Hinduism can act as the protective factor. It appears that there is a complex interplay between religion and suicide in Fiji that does not appear to reflect the relationship between religion and suicide in other countries. Given this, more investigation into this relationship is required. Surprisingly, well-known risk factors for suicide and suicidality such as feelings of hopelessness, perceived burdensomeness, history of psychiatric admission and early trauma, life stresses such as romantic breakups, legal problems, previous suicide attempts, serious physical illness with chronic pain, and loved one's history of suicide (Franklin et al., 2017; Holman &Williams, 2022; Park et al., 2020), have not been indicated in suicide research in Fiji. Moreover, dichotomizing suicide and suicide risk can lead to oversimplifying suicide and suicidal behaviour. Dichotomizing these variables may yield misleading results (MacCallum et al., 2002), and may lead to a loss of valuable and accurate information about the unique risk factors of different individuals. Most of the existing studies on suicide in Fiji appear to have used this approach. Despite mental health conditions such as depression, substance abuse, and anxiety having been identified as risk factors in other countries (Franklin et al., 2017; Wastler et al., 2020), only a few of the included studies reported the prevalence of psychiatric morbidity as a factor for suicide and suicidality in Fiji. The few studies that did this emphasised depression, schizophrenia, personality disorder,

stress, and anxiety disorders as the most common mental health issues associated with attempted suicide cases and deaths by suicide (Aghanwa, 2000; Karim & Price, 1973; Price & Karim, 1975; Roberts, 2007). Though mental health services in Fiji started in 1884, there is still a significant lack of qualified mental health practitioners (Ramkumar et al., 2022). The mental health conditions of the individuals who died from suicide were not recorded, and those who attempted suicide were not assessed until recently in Fiji.

4.2.7. Limited Focus on the Geographical Locations

There has been a limited focus on comparing across different geographical locations, the use of a small sample size, and a lack of empirical evidence. Most of the included studies looked at an aspect of suicidality across Fiji as a whole country. Fiji consists of 110 inhabited islands and 14 provinces, yet there is limited knowledge of suicide and suicidal behaviours related to specific provinces and islands. This is limiting, as the suicide rate of a few locations in Fiji cannot determine the suicide rate of the entire country. There are provinces and remote rural villages in Fiji where nothing is known or studied to date about the suicide rate or trends of suicidality among the Fijians living in those areas. Some of these rural areas are predominantly inhabited by Indigenous Fijians. Contrasting occurrences may be happening in those areas regarding suicide and suicidal behaviour which we are not yet aware of.

4.2.8. Use of Small Sample Size

Moreover, most of the included studies used small sample sizes. For example, out of the 30 included studies, 11 had a sample that ranged from 10 to 90 deaths by suicide or attempted suicide cases. Findings from studies with small sample sizes need to be interpreted with caution since small sample sizes have higher variability which makes it difficult to make group-based recommendations. Small sample sizes are not reliable enough to conclude trends and patterns of suicide and suicidality in the entire population of Fiji. Studies with large sample sizes are needed to ensure that findings can be generalised with confidence.

Therefore, there is a need for a robust study utilising a large sample size, including samples from all the geographical locations in Fiji, to provide a clear picture of what is happening in Fiji with regard to suicide and suicidality.

4.3. Consistent finding

Whilst there were some unexpected findings, there was a similarity about the common methods for suicide across Western Pacific countries. Although it needs to be noted that, this differs from methods used in more socioeconomically developed countries. Hanging and the use of agricultural pesticides were found to be commonly used methods for suicidal behaviour. It is likely that the unavailability of other methods such as firearms, high land areas, or tall buildings to attempt suicide by jumping from heights, and the ability to access pesticides such as paraquat in rural agricultural areas, hanging and the use of pesticides continue to be the most commonly chosen methods to attempt suicide.

In summary, this scoping review identified some unique features relating to suicide and suicidality in Fiji. These unique features indicate that suicide experiences may not be the same in Fiji as it is in other countries. Therefore, the interventions and preventive measures for suicidal behaviour that are adopted in other countries cannot be easily implemented in Fiji without consideration of the uniqueness of suicide and suicidality in Fiji.

4.4. Review strengths and limitations

Though this review widely scoped and mapped the existing literature and identified gaps in the existing literature, it is not without limitations. One of the limitations is the exclusion of studies not published in the English language due to the lack of resources for translation. Relevant studies may have been available in iTaukei or Hindi that include culturally specific information regarding suicide and suicidality, which could have highlighted certain facts to either support or contradict the findings of this review. This study

has not included grey literature. An initial search on grey literature yielded many irrelevant and inaccurate results; therefore grey literature was not included. This study included articles until the end of 2021. There are a few articles on suicide and suicidality in Fiji which were published after 2021 that are not included in this review. Apart from the above-mentioned limitations, the strengths of this review include utilising a systematic methodology that is replicable, and transparent. This review utilised a broader search string and a broader range of academic databases to capture a wider range of literature than the previous reviews. Secondly, there was no restriction on the study design or date of publication. This allowed for the capture of all the available information about suicide and suicidality in Fiji up till the end of 2021. Thirdly, this review clearly outlined how the studies were selected with a clear description of inclusion and exclusion criteria, which allows for transparency and replicability for future research.

4.5. Recommendations for future research

Based on the findings of this scoping review, to address the gaps identified in the existing literature, the following are recommendations for future research:

- Future studies are required to focus on the combination of suicide concepts, such as suicide and suicide ideation. This will allow researchers to gain a comprehensive understanding of the complex interplay of different variables that lead to suicidal behavior. Additionally, utilizing primary data sources by collecting primary data directly from individuals experiencing suicidal ideation or who attempted suicide can greatly contribute to increasing the reliability of the research findings.
- To yield meaningful findings, suicide research in Fiji should utilize different research designs, such as qualitative research designs or mixed method approaches, and incorporate empirical evidence beyond focusing solely on retrospective case series and demographic variables. By utilizing different research designs, researchers can

capture a more comprehensive understanding of the suicide risk factors and better contribute to preventive measures. For instance, the qualitative research method can enable an in-depth understanding of individual perspectives and emotions that lead them to suicidal behavior.

- Considering there is a huge lack of gender specific studies in Fiji to understand suicide, the need for age and gender specific studies is crucial to better understanding the interaction of age and gender in different demographic groups particularly for suicidal behavior. This will allow the researchers to identify unique suicide risk factors, trends, and patterns that may influence differently to different age groups and genders.
- Future studies would benefit from utilising a diverse sample to investigate the risk factors for the high suicide rate among young Indo Fijian females.
- Studies need to be conducted to understand suicide and suicidality among the diverse populations such as the LGBTQ+ community in Fiji, the older generation, and among the other ethnic groups.
- Studies also need to ensure that they are measuring suicidality using psychometrically sound and well-established measures such as the Columbia Suicide Severity Rating Scale (Posner et al., 2011); the Beck Scale for Suicide Ideation (Beck et al., 1988); the Suicide Probability Scale (Bagge & Osman, 1998) and the Beck Hopelessness Scale (Beck et al., 1974).
- Although there are several studies conducted on impulsive suicide worldwide, Fiji research has yet to explore this aspect of suicide
- A more reliable and rigorous data collection and recording system on suicide and attempted suicide needs to be established in Fiji. A reliable data collection system would assist in identifying accurate numbers of suicide and attempted suicide cases,

allowing for trends, and patterns to be identified. This could assist in better identifying the risk factors and hence better support suicide prevention and intervention measures.

- There is a need to carefully consider religious and cultural diversity when addressing mental health issues for suicide and suicidality in Fiji.

4.6. Conclusion

This study was the first of its kind to widely scope and map the existing literature and to identify the gaps in the existing literature on suicide and suicidality in Fiji. This study has contributed to the broader area by not only identifying research gaps but also by highlighting the uniqueness of suicide and suicidality in Fiji. The unique features of suicide and suicidality in Fiji indicate that suicide factors and rates in Fiji are unlike other countries. Therefore, Fijian-specific interventions and preventive measures need to be developed that are based on Fijian research evidence. Without this, mental health practitioners and policymakers are at risk of not being able to appropriately address suicide and suicidal behaviours in Fiji. This study can be used to guide future research that can make meaningful contributions that minimise the risk and impact of suicide and reduce suicidal behaviour.

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Appendix A

Initial Search Strategy

Date	Search Strategy	Database	Number of results	Fields searched	Filters applied	Notes
14/12/2021	suicid* AND Fiji*	PubMed	85,609	All	none	majority irrelevant articles
14/12/2021	suicid* AND Fiji*	APA PsycINFO	25,792	All	none	majority irrelevant articles
14/12/2021	suicid*AND Fiji*	APA PsycArticles	813	All	none	majority irrelevant articles
14/12/2021	suicid*AND Fiji*	CINAHL	10,182	All	none	majority irrelevant articles
14/12/2021	suicid* AND Fiji*	Psychology and Behavioural Science collection	5,723	All	none	majority irrelevant articles
14/12/2021	suicid* AND Fiji*	ProQuest	597,716	All	none	majority irrelevant articles
14/12/2021	suicid* AND Fiji*	Sociology Source Ultimate	21,899	All	none	majority irrelevant articles
14/12/2021	suicid* AND Fiji*	Academic Search Ultimate	237,978	All	none	majority irrelevant articles

Appendix B

Final Search Strategy

Date	Search Strategy	Database	Number of results	Fields searched	Filters applied	Notes
22/12/2021	(suicid*) AND (Fiji* OR Pacif*)	APA PsycArticles	21	Title/Abstract	none	relevant articles
22/12/2021	(suicid*) AND (Fiji* OR Pacif*)	PubMed	644	Title/Abstract	none	relevant articles
22/12/2021	(suicid*) AND (Fiji* OR Pacif*)	Academic Search Ultimate	177	Title/Abstract	none	relevant articles
22/12/2021	(suicid*) AND (Fiji* OR Pacif*)	CINAHL	93	Title/Abstract	none	relevant articles
22/12/2021	(suicid*) AND (Fiji* OR Pacif*)	Google Scholar	991	none	none	relevant articles
22/12/2021	(suicid*) AND (Fiji* OR Pacif*)	Psychology and Behavioural Science Collection	25	Title/Abstract	none	relevant articles
22/12/2021	(suicid*) AND (Fiji* OR Pacif*)	APA PsycINFO	191	Title/Abstract	none	relevant articles
22/12/2021	(suicid*) AND (Fiji* OR Pacif*)	SAGE journal	12	Title/Abstract	none	relevant articles
22/12/2021	(suicid*) AND (Fiji* OR Pacif*)	Sociology Source Ultimate	52	Title/Abstract	none	relevant articles
22/12/2021	(suicid*) AND (Fiji* OR Pacif*)	ProQuest	253	Title/Abstract	none	relevant articles

Appendix C

Phase 2 Screening Result

No	Year	Author	Title	Screening result	Reason
1	1914	McNeill, J.	Report on the condition of Indian immigrants in the four British colonies: Trinidad, British Guiana or Demerara, Jamaica, and Fiji, and in the Dutch Colony of Surinam or Dutch Guiana, Part II: Surinam, Jamaica, Fiji and general	Excluded	This study does not measure suicide, suicide attempt, suicide ideation, or suicide plan. Therefore excluded
2	1971	Ree, G. H.	Suicide in Macuata province, Fiji. A review of 73 cases	Included	This is a case series study on suicide in Macuata province in Fiji. Fulfils inclusion criteria. Therefore included
3	1973	Karim, I, & Price, J.	Suicide in Fiji	Included	This is one of the primary case series studies on suicide in Fiji. Fulfils inclusion criteria. Therefore included
4	1975	Price, J., & Karim, I.	Suicide in Fiji: a two-year survey	Included	This is a case series study on suicide in Fiji. Fulfils inclusion criteria. Therefore included
5	1984	Haynes, R. H.	Suicide in Fiji: a preliminary study	Included	This study focuses on suicide in Macuata province of Vanua Levu in Fiji. Fulfils inclusion criteria. Therefore included
6	1985	Lal, B. V.	Veil of dishonour: sexual jealousy and suicide on Fiji plantations	Included	This study provides a clear understanding of Indo Fijian suicide during the indenture

No	Year	Author	Title	Screening result	Reason
					period. Fulfils inclusion criteria. Therefore included
7	1907	Herald, New Zealand	Suicide at Fiji	Excluded	This article is a short report of a man's death by suicide in Fiji. Does not measure suicide, suicide ideation, suicide plan, or suicide attempt. Therefore, excluded
8	1985	Murphy H.B. M.	Abstracts and Reviews: 6. Western Pacific: CULTURE, YOUTH AND SUICIDE IN THE PACIFIC: PAPERS FROM AN EAST-WEST CENTER CONFERENCE edited by F. X. HEZEL, D. H. RUBENSTEIN and G. M. WHITE.	Excluded	This study does not include Fiji. Therefore excluded
9	1987	Counts, D. A.	Female suicide and wife abuse: a cross-cultural perspective	Excluded	This study vaguely informs about female suicide in Fiji. Therefore excluded
10	1987	Haynes, R. H.	Suicide and social response in Fiji: a historical survey	Included	This study focuses on the social responses to the risk factors and discusses the overrepresentation of the Indo Fijian population in suicide statistics. Fulfils inclusion criteria. Therefore included
11	1994	Pridmore, S., & Ryan, K.	Suicide and violence in Fiji (part 2)	Included	This is a case series study on suicide in Fiji. Fulfils inclusion criteria. Therefore included
12	1995	Pridmore, S., Ryan, K., & Blizzard, L.	Victims of violence in Fiji	Included	This is a case series study on suicide in Fiji. Fulfils inclusion

No	Year	Author	Title	Screening result	Reason
					criteria. therefore Included
13	1996	Adinkrah, M; Chand, A	Suicide in Fiji: Report of a nationwide survey	Included	This study provides a detailed explanation of suicide in Fiji based on a survey. Fulfills inclusion criteria as the study is focused on suicide in Fiji. Therefore included
14	1996	Pridmore, S., Lawler, A., & Couper, D.	Hanging and poisoning autopsies in Fiji	Included	This is a case series study on suicide in Fiji. Fulfils inclusion criteria. Therefore included
15	1998	Booth, H	Casualties of development? Child and youth suicide in the Pacific	Included	This study describes child and youth suicide in the Pacific and includes data from police statistics for Fiji. This study fulfills the inclusion criteria as it focuses on youth suicide in Fiji. Therefore included
16	1999	Booth, H.	Pacific Island suicide in comparative perspective	Included	This is a comparative study analysing suicide among 13 Pacific Island nations including Fiji. Fulfils inclusion criteria. Therefore included
17	2000	Aghanwa, H.S	The characteristics of suicide attempters admitted to the main general hospital in Fiji Islands	Included	This study focuses on attempted suicide cases in Fiji. Fulfils inclusion criteria. Therefore included
18	2000	Aghanwa Herry. S	The characteristics of suicide attempters admitted to the main general hospital in Fiji Islands	Excluded	This study appears to be a duplicated version of another study. Therefore excluded
19	2000	Chang, O	Suicide in Fiji–A Country Report	Included	This is a review of past literature on suicide in Fiji from the period 1993 to 1998. It provides insight into

No	Year	Author	Title	Screening result	Reason
					cultural differences in suicidal behaviour in Fiji. Fulfils inclusion criteria. Therefore included
20	2000	Morris, P., & Maniam, T.	Suicide in Fiji: a review of the literature	Included	This is the first review of literature on suicide in Fiji. Fulfils inclusion criteria. Therefore included
21	2001	Aghanwa, H.S	Attempted suicide by drug overdose and by poison-ingestion methods seen at the main general hospital in the Fiji islands: a comparative study	Included	This study focuses on attempted suicide cases in Fiji. Fulfils inclusion criteria. Therefore included
22	2001	Baravilala, W.	Suicide in the Pacific--a mental health epidemic	Excluded	This study does not include much information about Fiji with no new information. Therefore excluded
23	2003	Adinkrah, M	Homicide-suicides in Fiji: offense patterns, situational factors, and sociocultural contexts	Included	This study describes homicide suicide cases in Fiji. It includes suicide, participants are Fijians living in Fiji. Fulfils inclusion criteria. Therefore included
24	2004	Aghanwa, H.	The determinants of attempted suicide in a general hospital setting in Fiji Islands: a gender-specific study	Included	This study focuses on attempted suicide cases in Fiji. Fulfils inclusion criteria. Therefore included
25	2007	Forster et al.,	A Note on Recent Trends in Suicide in Fiji	Included	This study provides a brief review of previous literature on suicide in Fiji. Fulfils inclusion criteria. Therefore included
26	2007	Grambeau, Marcie L	Causes & Perceptions: An Exploratory Study of	Excluded	This study does not provide a clear description of the

No	Year	Author	Title	Screening result	Reason
			Suicide in Indo-Fijian & Fijian Youth		participants. Initially, this study was included and later excluded as decided in the audit
27	2007	Gunnell, D. etal	The global distribution of fatal pesticide self-poisoning: systematic review	Excluded	This study vaguely includes Fiji. Therefore excluded
28	2007	Roberts, G; Cohen, J; Khan N, & Irava, W	Attempted Suicide in Western Viti Levu, Fiji	Included	This is a case series study on attempted suicide in Western Vitilevu in Fiji. Fulfils inclusion criteria. Therefore included
29	2008	Bridges, F. S.	Social integration and suicide in the Western Pacific Islands	Excluded	This study vaguely includes Fiji. Therefore excluded
30	2009	De Leo, Diego	WHO research and intervention projects into suicidal behaviours: The WHO/SUPRE-MIS and the WHO/START studies	Included	This study included suicide in Fiji. Fulfils inclusion criteria. Therefore included
31	2009	De Leo, Milner & Wang Xiangdong	Suicidal behavior in the Western Pacific region: characteristics and trends	Excluded	After reading the full text, it appears that this study is a duplicate version of a previous study by the same author. Therefore excluded
32	2010	Becker et al.,	Youth health-risk behaviour assessment in Fiji: the reliability of Global School-based Student Health Survey content adapted for ethnic Fijian girls	Excluded	This study does not include suicide, suicide ideations, or suicide attempts in Fiji. There excluded
33	2010	De Leo, D.; Milner, A.	The WHO/START Study: Promoting suicide prevention for a diverse range of cultural contexts	Excluded	Fiji was not one of the Western Pacific Nations included in this study. Therefore excluded

No	Year	Author	Title	Screening result	Reason
34	2010	De Leo, Diego; World Health Organization	Approach to evidence-based suicide prevention	Excluded	Fiji was not included in this study. Therefore excluded
35	2012	Henson et al.,	Attempted suicide in Fiji	Included	This study provides a comparative analysis of suicide in Indo Fijians and Fijian community. Fulfils inclusion criteria. Therefore included
36	2012	Nafiza, N., Tuiketei, T., Biaukula, V., & Rokoduru, A.	Suicides in Rakiraki	Included	This is a case study on suicide in Rakiraki, Fiji. Fulfils inclusion criteria Therefore included
37	2012	World Health Organisation	Seoul Forum on Suicide Prevention in the Western Pacific Region, Seoul, Republic of Korea, 13-14 September 2012: report	Excluded	This study does not include the suicide data of Fiji. Therefore excluded
38	2012	Peiris-John, R., Wainiqolo, I., Kafoa, B., McCaig, E., & Ameratunga, S.	Population based characteristics of fatal and hospital admissions for acute poisoning in Fiji	Included	This study includes attempted suicidal behaviour in Fiji. Fulfils inclusion criteria. Therefore included
39	2012	Mable Taoi 1, Iris Wainiqolo, Berlin Kafoa, Bridget Kool, Asilika Naisaki, Eddie McCaig, Shanthi Ameratunga	Characteristics of fatal and hospital admissions for burns in Fiji: a population-based study (TRIP Project-2)	Excluded	This study does not measure suicide, suicide attempts, suicide ideation, and suicide plans. Therefore excluded

No	Year	Author	Title	Screening result	Reason
40	2012	Wainiqolo, I., Kafoa, B., Kool, B., Herman, J., McCaig, E., & Ameratunga, S.	A profile of injury in Fiji: findings from a population-based injury surveillance system (TRIP-10)	Excluded	This study does not measure suicide, suicide attempts, suicide ideation, or suicide plans. Therefore excluded
41	2012	Wainiqolo, I., Kafoa, B., Kool, B., Herman, J., McCaig, E., & Ameratunga, S.	A profile of injury in Fiji: findings from a population-based injury surveillance system (TRIP-10)	Excluded	After a full-text read, this study is found to be a duplicated version of another study. Therefore excluded
42	2013	De Leo et al	The WHO START Study	Included	This study provides data for comparative analysis between indigenous and nonindigenous communities in Fiji and discusses the differences between different variables and methods of suicide. Fulfils inclusion criteria. Therefore included
43	2015	Chand, Rajni K	Access to information: questions on equality, gender, and geographical gap in relation to suicide prevention	Excluded	This study reports on the community workshops conducted in Fiji on suicide awareness. Included initially, later excluded as a result of the audit
44	2016	Lal, N et al	Suicide and Attempted Suicide Trends in Nadi: 2012-2014:-A Retrospective Audit	Included	This study analysis suicide and attempted suicide cases in Nadi\Fiji. Fulfils inclusion criteria. Therefore included
45	2016	Marshall et al	Characteristics of Suicide in Fiji: An Updated Review of the Literature	Included	This is the second review of literature on suicide in Fiji. Fulfils inclusion criteria. Therefore included

No	Year	Author	Title	Screening result	Reason
46	2016	Tiatia-Seath, J	Suicide Postvention: Support for Pacific Communities	Excluded	This study does not include Fiji. Therefore excluded
47	2017	Mazaba et al	Suicidal ideation in Fiji: Prevalence and its correlates among school-going adolescents in a global school health-based survey	Included	This study reported gender differences and age distribution for suicidal ideation in Fiji. Fulfils inclusion criteria. Therefore included
48	2018	Muertigue, R., & Naiker, K.	The Perceived Factors of Student Suicide in Fiji	Included	This study analysed the perceived factors for suicidal behavior determined by the students in one of the universities in Fiji. Fulfils inclusion criteria. Therefore included
49	2021	Chang, O et al.,	Impact of a mobile-based (mHealth) tool to support community Health nurses in early identification of depression and suicide risk in Pacific Island Countries	Excluded	This study tests a screening tool for depression and suicide risk to support community health nurses in the Pacific in the early identification of depression and suicide risk. Included earlier, later excluded through the audit
50	2021	Iyengar, M. S et al	Development and usability of a mobile tool for identification of depression and suicide risk in Fiji	Excluded	This study focuses on the usability of a mobile tool to identify depression and suicide. It does not measure suicide, suicide ideation, suicide plan, or suicide attempt. Therefore excluded
51	2021	Mathieu, S. et al	Suicide and suicide attempts in the Pacific Islands: A Systematic Literature Review	Included	This is a recent review of literature on suicide in the Pacific and includes relevant data on suicide in Fiji. Therefore included