

REVIEW ARTICLE

Culture shock and healthcare workers in remote Indigenous communities of Australia: what do we know and how can we measure it?

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ABSTRACT

Introduction: Culture shock or cultural adaptation is a significant issue confronting non-Indigenous health professionals working in remote Indigenous communities in Australia. This article is presented in two parts. The first part provides a thorough background in the theory of culture shock and cultural adaptation, and a comprehensive analysis of the consequences, causes, and current issues around the phenomenon in the remote Australian healthcare context. Second, the article presents the results of a comprehensive literature review undertaken to determine if existing studies provide tools which may measure the cultural adaptation of remote health professionals.

Methods: A comprehensive literature review was conducted utilising the meta-databases CINAHL and Ovid Medline.

Results: While there is a plethora of descriptive literature about culture shock and cultural adaptation, empirical evidence is lacking. In particular, no empirical evidence was found relating to the cultural adaptation of non-Indigenous health professionals working in Indigenous communities in Australia. In all, 15 international articles were found that provided empirical evidence to support the concept of culture shock. Of these, only 2 articles contained tools that met the pre-determined selection criteria to measure the stages of culture shock. The 2 instruments identified were the Culture Shock Profile (CSP) by Zapf and the Culture Shock Adaptation Inventory (CSAI) by Juffer.

Conclusions: There is sufficient evidence to determine that culture shock is a significant issue for non-Indigenous health professionals working in Indigenous communities in Australia. However, further research in this area is needed. The available



empirical evidence indicates that a measurement tool is possible but needs further development to be suitable for use in remote Indigenous communities in Australia.

Key words: Australia, cultural adaptation, culture shock, Indigenous health, remote health, remote health professionals.

Introduction

Culture describes the collective way of life, values, morals, language, world views, and patterns of behaviour of a group of people. It includes what they think, say, do, believe, and make, and is like a learned template for living (p48)¹. 'Culture shock' is the general term used to describe the stress, anxiety, or discomfort a person feels when they are placed in an unfamiliar cultural environment, due to the loss of familiar meanings and cues relating to communication and behaviour²⁻⁵. Recently, the term 'cultural adaptation' has been used to highlight the possible positive outcomes of well-managed culture shock, such as personal growth and development⁴.

The phenomenon of culture shock has been linked to poor retention rates of remote area healthcare professionals and to the quality of health care in remote communities⁶. The general stress experienced by healthcare workers itself is also a likely contributor to high turnover rates in these areas⁷. The turnover of healthcare professionals in remote areas is high. For example, the turnover rate of nurses and midwives employed in remote health in the Northern Territory is estimated at 57% per annum (p32)⁸. High turnover is costly to the government⁸, and has a detrimental effect on the health care and social development of remote communities. Retaining a highly-trained and effective healthcare workforce is important in providing quality, accessible health care to people living in these areas. While there have been many studies conducted on culture shock in the context of international business people, students, and volunteers, there is little known about the situation of non-Indigenous people working in remote Indigenous communities in their own country.

This article is presented in two parts. The first part provides a thorough background in the theory of culture shock and cultural adaptation, and a comprehensive analysis of the consequences, causes, and current issues around the phenomenon in the remote Australian healthcare context. This is important as the literature relating to culture shock and cultural adaptation in Australian rural and remote health is limited, and this section also provides a background for the literature review. Second, the paper presents the results of a comprehensive literature review undertaken to determine if existing studies provide tools which may measure the cultural adaptation of remote health professionals. The literature review also evaluates the need for further research in this area.

Part 1: Background

Culture shock, cultural adaptation

Culture shock can affect many different types of people in cross-cultural situations, including tourists, immigrants, refugees, and 'sojourners' such as international business people and international students. Sojourners are 'between-society culture travellers' whose stay in the host culture is temporary, and who have the intention to return to the culture of origin after their stay (p6)³. The term 'culture shock' was first coined by the anthropologist Kalvero Oberg in 1954, who described it as 'the anxiety that results from losing all our familiar signs and symbols of social intercourse' (p177)². Oberg and other early writers likened culture shock to a form of occupational disease which could probably be cured. More contemporary explanations describe culture shock as a learning experience, which can have positive outcomes for personal growth and development. The most recognised of these scholars is Peter Adler, with his 'transitional experience' theory of culture



shock⁴. These contemporary explanations often refer to culture shock as 'cultural adaptation', in line with the view that positive outcomes of the process can be achieved. Although Oberg's 'disease' model has been largely rejected (p4-7)⁵, his 'stage theory' of culture shock continues to be drawn on today. Other scholars such as Pedersen, Smalley, and Eckermann^{4,5,9-11} have re-named the stages, although they remain consistent with Oberg's original model. According to the stage theory, there are 4 stages of culture shock that an individual will experience, which are outlined below.

The *first stage* is the honeymoon stage, also known as the fascination, elation, or exploration stage. This is where the individual feels a sense of euphoria, excitement, and enthusiasm. Conflict or problems arising from missing cultural cues and cultural misunderstandings are seen as minor or amusing, and as part of the overall 'adventure'.

Oberg's *second stage* has been referred to as the rejection, hostility, frustration, or disenchantment stage, and is when the culture 'shock' begins to set in. It is in this stage that language barriers and the misunderstanding of cultural cues begin to cause trouble for the visitor, who develops a 'hostile and aggressive attitude' (p178)². During culture shock, the visitor is likely to find the experience 'bewildering, confusing, depressing, anxiety-provoking, humiliating, embarrassing, and generally stressful in nature' (p171)¹². They will reminisce about their home culture and are likely to become judgmental and use stereotyping. Some people will leave at this stage, returning to their home culture without overcoming culture shock.

The *third stage* has been described as the adjustment, recovery, coping, or beginning resolution stage. Here, the visitor begins to form a more balanced and open-minded view of the other culture. While they still struggle in some instances, they begin to understand and cope with many previously impossible day-to-day situations, and to develop relationships with people in the host culture.

Oberg's *final stage* is where the individual becomes accustomed to the other culture, and has been called the biculturalism, acculturation, or effective functioning stage. This is the goal or ideal state for a visitor in another culture. While small disturbances relating to differences in culture can occasionally arise, the person can function as effectively and productively as they did in their own culture, or close to it. The beliefs and values of the other culture are accepted as a valid and acceptable way of living.

For the purposes of this article, the four stages of culture shock will be referred to as the honeymoon stage, the rejection stage, the beginning resolution stage, and the effective functioning stage. Oberg's stage theory was used by Lysgaard in 1955 to develop a 'U-curve' hypothesis¹³. The U shape follows the line of adjustment as an individual moves through the stages, from the 'high' honeymoon stage, down through the 'low' rejection stage, and eventually back up to the 'high' effective functioning stage. This U-curve was expanded into a 'W-curve' by Gullahorn and Gullahorn in 1963, to include the second 'U-curve' that an individual experiences when they return to their home culture¹⁴. This theory suggests that sojourners will experience reverse culture shock when they return to their home country as they have learned to adapt to the new host culture.

Culture shock in healthcare workers in remote areas of Australia

For the purposes of this article, 'remote' will be defined as those areas which are located in the Australian Standard Geographical Classification – Remoteness Areas (ASGC-RA) 4 and 5, or the 'Remote' and 'Very Remote' areas, as identified by the Australian Bureau of Statistics¹⁵. Most communities within these Very Remote Areas have a majority Indigenous population¹⁶.

Culture shock experienced by healthcare workers in these communities can have a potentially detrimental effect on the delivery of quality healthcare services to Australians living in these areas. In his book *Why Warriors Lie Down and Die*, Trudgen explains the 'two-edged sword' effect of culture



shock in communities⁶. First, healthcare workers experiencing culture shock will leave the remote area, taking away medical expertise and increasing staff turnover. Second, the remote community's development is compromised as Indigenous people lose faith in the healthcare system. These two major consequences of culture shock on non-Indigenous workers in remote Indigenous communities are examined below.

According to Trudgen, the high turnover of health professionals in remote Indigenous communities is a 'serious, perennial condition affecting all aspects of community and regional development', which is very costly to governments (p178)⁶. The total annual cost of nursing workforce turnover for the Department of Health and Families in the Northern Territory is estimated at over AU\$6.8 million, with the average cost per turnover for a nurse estimated at about \$10,000 (even higher in the remote sector) (p97)⁸. It is unknown to what extent the high staff turnover experienced in remote areas of Australia can be attributed to culture shock. However, we can surmise that the negative aspects of culture shock could undermine a worker's ability to function effectively and perform their tasks successfully. This could make it difficult for them to move into the effective functioning stage, or contribute to their decision to leave the community.

Non-Indigenous healthcare workers beginning work in remote Indigenous communities enter 'cross-cultural contexts involving many... cultural complexities' (p89)¹⁷, working among people from a culture which is markedly different to their 'white' culture, who speak a different language, and have different customs, values, beliefs, rituals and practices. They are also likely to have different ideas about health and wellbeing. Not only is the culture in their new workplace different, but they also have to adapt to living in a very remote area, where both medical and other resources are limited. Training, orientation, and support programs are often limited or non-existent, and generally fail to adequately prepare the healthcare professional for their new role in the community^{18,19}. Non-Indigenous healthcare workers operate within and between two 'distinct cultural

spaces' and negotiate the demands of their own culture and profession with those of the Indigenous community (p514)¹⁸. Overseas trained doctors play a significant role as GPs in Indigenous health²⁰, and are required to navigate at the intersection of three cultural spaces - the Indigenous culture, the Australian healthcare system culture, and their own culture¹⁸. Healthcare workers operating within these differing cultural paradigms are highly susceptible to the negative aspects of culture shock as they experience cultural dissonance and conflict, potentially leading to stress, burn-out, and ultimately a poor rate of staff retention.

Culture shock not only affects individual healthcare workers, but can also have a significant impact on the community itself. The negative encounters experienced by clients of healthcare services can lead to distrust of the system and hostility towards future non-Indigenous employees. Non-Indigenous workers experiencing culture shock do not work to their full potential, and are often stressed and irritable⁶. Due to a lack of training, it is often also the case that these workers cannot communicate effectively with their patients due to language and cultural barriers (pp120-127)^{18,21}. Communication is a major issue in the successful employment of non-Indigenous people in remote communities^{6,9,22-24}. Aside from the frustration this causes to the healthcare worker, poor communication is identified as 'one of the major negative aspects' of the hospital or health clinic experience for families from remote areas (p5)²³. Trudgen argues that workers who are not trained and are therefore affected by culture shock cannot effectively pass on their skills and knowledge to Indigenous workers in the community. This in turn marginalises the Indigenous workforce and 'kill[s] dreams of self-management and self-determination' in Indigenous communities (p232)⁶.

Cultural distance and other variables affecting culture shock

It has been well documented that 'cultural distance', or the degree of difference between the home culture and the host culture, plays a significant role in affecting the level of culture shock an individual will experience^{3,12,25-29}. The



greater the cultural discrepancies between the home and host culture, the greater the psychological stress will be on the sojourner. They will experience a 'greater intensity of life changes during cross-cultural transition and, consequently, more acculturative stress' (p95)³. One of the most well-known researchers on culture is Geert Hofstede, who in 1980 conducted a survey into the national culture differences of IBM employees in subsidiaries across 64 countries^{30,31}. He found that national cultures had similarities and differences which enabled them to be grouped into different categories or 'cultural dimensions', the most eminent and notable dimension being the Individualism category³². Individualist countries such as the USA and Australia are those where emphasis is placed on individual rights and personal achievement, and where people look after themselves and their immediate families. Collectivist countries such as China and the Latin American countries are those which place a greater value on group cohesion and where extended family ties are important. From his study, Hofstede developed a scale for each cultural dimension. The further one country is from the other on the scale, the more cultural distance there is between them, and so it follows that an individual working or living in the other culture will experience a greater degree of culture shock.

Australia is ranked second on the Individualism scale with a score of 90, behind only the USA. Australian Indigenous cultures were not studied by Hofstede, as they are usually grouped into mainstream Australian culture in an international context. However, Australian Indigenous cultures can be closely compared with other world cultures ranked on Hofstede's scales, such as family-oriented Asian countries and African kinship-group countries. Also, taking into account traditional Indigenous values such as emphasis placed on the family, close kinship structures, and other world views, it can be argued that Australian Indigenous cultures would be ranked strongly toward the collectivist end of the scale, although it is also the case that these cultures are in transition. A study regarding Canadian Indigenous culture and its place on Hofstede's Individualism scale asserted that Canadian Indigenous culture should be placed towards the collectivist end of the scale³³. Many scholars have

documented the similarities between Australian and Canadian Indigenous cultures both in terms of their cultural values and systems, as well as the two countries' similar colonial histories, geography, population distribution, and their treatment of Indigenous peoples³⁴. Even using these comparisons to similar cultures, it is of course difficult to rank Indigenous cultures on Hofstede's scale, especially taking into account the changes in Indigenous cultures since colonisation. These changes have been profound and encompass relationships to land, law, language, food, education, family, society, religion and beliefs. Hofstede's scales do rely on what some think of as an over-generalisation of national cultures^{35,36}. However, it is a useful tool to compare the major differences between European Australian and Indigenous Australian cultures which will have an impact on the cultural distance experienced by those in cross-cultural situations.

Apart from this cultural distance factor which can affect the degree of culture shock experienced by individuals in another culture, there are many other factors which influence the severity of culture shock. In his article *Sojourner Adjustment*, Church argues that the severity of culture shock experienced by a sojourner in another culture is dependent on both individual/personal factors and situational/structural factors²⁸. Individual factors include language proficiency, prior experience in other cultures, and personality traits. Situational factors consist of job conditions and satisfaction, the presence of colleagues, and positive social interaction with locals.

Other factors affecting the level of culture shock and psychological distress experienced by an individual are put forward by Ward et al in their book, *The Psychology of Culture Shock*³. These include the time span of the interaction, the frequency of contact with people from the host culture, and the degree of intimacy of cultural contact. The factors affecting the severity of culture shock and their relevance in the remote healthcare context are outlined below (Table 1).



Table 1: Factors influencing the severity of culture shock and their context in remote healthcare work in Australia^{3,11,12,22,25-29,37-42}

	Factors influencing the severity of culture shock [ref. no.]	Non-Indigenous remote health care workers in Australia [ref. no.]
SITUATIONAL / STRUCTURAL	Cultural distance [3,12,25-29]	Very high: Individualist dominant cultures and collectivist Indigenous cultures (and cultures in transition) [30,31,33]
	Job conditions and satisfaction [28]	Not always high, due to pressure, lack of resources, lack of training, and remote location [7,37,38]
	Presence of colleagues [11,39]	Not always, and colleagues are not always positive or functioning effectively [6,7]
	Clearly defined job roles [39]	Quite often remote health care workers take on advanced responsibilities due to understaffing [7,37,40], and adopt multiple conflicting job roles [41]
	Positive social interaction with locals [28]	Not always possible due to negative encounters experienced by patients in the past, resulting in suspicion and hostility [23]
	Time span of cultural interaction [3]	Relatively extended - at least a few months
	Frequency of contact with people from host culture [3]	Constant while living in the remote community
	Degree of intimacy of cultural contact [3]	Usually high - healthcare workers and patients
INDIVIDUAL / PERSONAL	Language proficiency/ communication skills [9,22,28,42]	New healthcare workers not familiar with local Indigenous language, often due to lack of appropriate training [6,11,18]
	Prior experience in other cultures [28]	Dependent on the individual
	Personality traits [28]	Dependent on the individual

Based on the above factors, it can be argued that the culture shock experienced by non-Indigenous health workers in remote Indigenous communities of Australia is likely to be substantial. In particular, the great degree of cultural distance between the two cultures makes it difficult for these workers to adjust to the new culture and workplace without experiencing significant psychological distress. Along with the advanced responsibility taken on by healthcare workers due to understaffing and extended roles^{37,40}, the potential for severe culture shock is huge. This may help to account for the high turnover rates of remote healthcare workers, and indicates the need for a solution.

Part 2: Literature review

Despite the abundance of descriptive literature around the topic of culture shock, there is a significant lack of empirical studies in this area. Numerous researchers have noted 'how little empirical work there has been done in the area of culture shock and cross-cultural adaptation processes' (p5)⁴³. There has been little attempt to 'measure the phenomenon, or even to validate the concept

empirically...[and] there are many assertions... that need to be investigated scientifically' (p149)²⁹.

Measuring the phenomenon of culture shock is important to enable organisations to support workers through the second rejection stage of culture shock, and aid them to move to the effective functioning stage of cultural adaptation. Being able to tell if a healthcare worker is functioning effectively or if they are still experiencing the adverse effects of culture shock would enable organisations to address the needs of individual healthcare workers, and to reduce the negative effects of culture shock.

Method

A comprehensive literature review was conducted using CINAHL and Ovid Medline. Before the searches were conducted, inclusion and exclusion criteria were agreed on by all authors (Table 2). The search terms used were culture shock, social adjustment AND acculturation, cultural adaptation AND culture shock, culture shock measur* OR culture measur*.



Table 2: Inclusion and exclusion criteria

Criteria	Inclusion	Exclusion
1. Time period	All articles: Ovid Medline searched 1950 to 2010 CINAHL searched 1982 to 2010	None
2. Language	English	Non-English
3. Place of study	Included all studies - both in Australian remote health context, and international context	None
4. Age of subjects	Adults	Children
5. Type of article/study	A. Empirical evidence	Descriptive literature
	B. Studies incorporating a tool or instrument to measure culture shock	Studies without a measurement tool or instrument
	C. Tool or instrument which measures the stages of culture shock	Tools which measure culture shock at one point in time
	D. Tool or instrument which measures culture shock mid-employment / mid-sojourn	Tools which predict the likelihood or severity of culture shock pre-employment / pre-sojourn

Article abstracts were reviewed by the primary author, and the articles which met the first 5 selection criteria were retrieved, that is those English-language studies on adults which included empirically-based evidence relating to culture shock and cultural adaptation in sojourners. The reference lists of these articles were searched by the primary author for further appropriate articles which were located using CINAHL, Ovid Medline, ProQuest Central, and Science Direct. Author searches were conducted to ensure all potential sources had been located. All authors reviewed the remaining articles and came to a consensus regarding their suitability to the final selection criteria.

Results

A total of 15 articles provided empirical evidence to support the concept of culture shock (Appendix I). Of these, eight focussed on the factors influencing the severity of culture shock and the nature of the culture shock phenomenon^{12,25-27,42,44-46}. They did not incorporate any tool or instrument to measure the level of culture shock, and so were not further analysed.

The remaining 7 articles^{29,39,43,47-50} included a tool or instrument to measure the level of culture shock. The first five of these were not analysed further. The tools used in these 5 articles, along with the reasons for their exclusion from the next stage of analysis, are now described (Table 3).

The remaining 2 articles remaining met all of the selection criteria. First, the measurement tool developed by Zapf was called the Culture Shock Profile (CSP), which was used on social workers in remote Yukon communities³⁹. In his study, Zapf constructed a questionnaire made up of 4 scale items: (i) the comfort with social diversity scale; (ii) the open-mindedness scale; (iii) the role clarity scale; (iv) and the culture shock profile. Results from the questionnaire were calculated to produce a CSP score for respondents at time intervals to correspond with the U-curve: at arrival, between 2 and 6 months, and at 12 months. The social workers in Zapf's study showed a high CSP score on arrival, a significant drop in CSP score over the first 6 months, and a return to a higher CSP score by the end of the year. These results therefore support the concept of the U-curve and the stage theory of culture shock.



Table 3: Empirical studies incorporating a measurement tool for culture shock, and their reasons for exclusion ^{29,47-50}

Authors [ref. no.]	Name of measurement tool	Description	Reason for exclusion
Pantelidou & Craig (2006) [50]	Culture Shock and Social Support Questionnaire	<ul style="list-style-type: none"> questionnaire asks respondents questions about their reactions to situations they experience in the host culture questionnaire results calculated using a statistical software package to produce a culture shock score 	<ul style="list-style-type: none"> the tool did not incorporate any way to measure the stage of culture shock an individual is experiencing culture shock was only measured at one point in time
Chapdelaine & Alexitch (2004) [49]	Revised Social Situations Questionnaire (RSSQ)	<ul style="list-style-type: none"> a list of social situations presented to respondents, who rate their level of difficulty experienced in each situation on a six-point scale, both in their home country and the host country culture shock scores produced by subtracting the degree of social difficulty in the country of origin from the degree of difficulty in the host country 	<ul style="list-style-type: none"> the RSSQ did not incorporate any way to measure the stage of culture shock an individual is experiencing culture shock was only measured at one point in time
Ward & Kennedy (1999) [47]	Sociocultural Adaptation Scale (SCAS)	<ul style="list-style-type: none"> sojourners rate the level of difficulty they experience in various host country situations using a five-point scale produces a scaled sociocultural adaptation score to determine levels of cultural competence or behavioural adaptability 	<ul style="list-style-type: none"> the SCAS was developed mainly using studies that measured adaptation at only one point in time, but used 4 longitudinal samples that measured at various points in time the longitudinal studies were not specific to the four stages of culture shock or to the U-curve, and all 4 studies measured adaptation at different intervals the SCAS was mainly developed and designed for use at one point in time, and is more concerned with the factors that affect adjustment rather than how it changes over time
Mumford (1998) [29]	Culture Shock Questionnaire (CSQ)	<ul style="list-style-type: none"> core culture shock items developed into a 12 part questionnaire, the results of which give a culture shock and interpersonal stress score for sojourners culture shock scores are compared to those of other sojourners 	<ul style="list-style-type: none"> the CSQ did not incorporate any way to measure the stage of culture shock an individual is experiencing culture shock was only measured at one point in time
Matsumoto et al (2006) [48]	Intercultural Adjustment Potential Scale (ICAPS)	<ul style="list-style-type: none"> respondents answer a 55-item questionnaire based on factors that affect intercultural adjustment results are used to calculate scores on the ICAP Scale 	<ul style="list-style-type: none"> the ICAPS is a tool used to predict the likelihood of culture shock occurring ICAPS is used pre-sojourn ICAPS does not measure the stages of culture shock



The other study which satisfied all the selection criteria was by Juffer, who developed the Culture Shock Adaptation Inventory (CSAI)⁴³. It asks respondents questions based on 4 main factors that are the foundation to adaptation: (i) feelings of control over the new environment; (ii) getting along with others; (iii) emotional well-being; and (iv) physical wellbeing. The CSAI uses the four-point Likert scale responses to these questions to place individuals on a bipolar continuum, from the 'Deep Culture Shock' pole (CS pole), to the 'Culturally Adapted' pole (CA pole). It does not give results directly based on the four stages of culture shock, but the continuum is like an adaptation of the stage theory. Juffer asserts the tool can guide trainers to 'assist individuals to successfully navigate through the adjustment experience and become successful, fully functioning... professionals again' (p3)⁵¹.

Discussion

Empirical literature that supports the concept of culture shock and provides evidence of the stage theory is limited. Measuring culture shock is difficult given the personal nature of the experience and the multiplicity of situations in which it can occur. However, there is a plethora of descriptive literature around the topic of culture shock outlining its many adverse effects, showing the need for effective solutions to the problem. The available empirical evidence indicates that a measurement tool is possible, but further research is necessary to develop a way to determine whether individuals are experiencing culture shock or are functioning effectively in their new environment. The instruments developed by Zapf and Juffer were the best examples found, and met all of the selection criteria. However, these tools were developed for use on social workers and international students, respectively, and so further development of the tools would be required to use them in the remote Australian healthcare context. Zapf's CSP tool in particular would need to be validated via further studies. The majority of studies found were based on international cross-cultural situations, for example international students and business people working overseas.

The literature and empirical research specific to non-Indigenous people working in Indigenous communities in their own country is very limited, indicating the need for studies specific to this context.

Expert opinion and the abundance of descriptive literature suggests that there is a significant relationship between the culture shock experienced by healthcare professionals and the high level of turnover in remote areas. Validating this claim with empirical evidence by first measuring the stages of culture shock is an important step towards reducing this turnover. The trend towards short term medical contracts and fly-in fly-out health care in remote communities adds to the complexity of healthcare provision in these environments and adds weight to the need to understand the phenomenon of cultural adaptation more fully. Filling the gaps in current knowledge will enable policy makers to implement interventions which can give the greatest benefit to remote healthcare workers and to remote health care in general.

Conclusion

For healthcare workers in remote Indigenous communities of Australia, the negative experience of culture shock can be problematic. At this stage it is unknown to what extent the stresses associated with working in an unknown and contrasting culture contribute to the premature departure of many highly-skilled professionals, and indeed the continuing employment of those workers influenced by the negative aspects of culture shock. Poor staff retention is costly, undermines the development of Indigenous communities, and counteracts work being done to close the gap in the health status of Indigenous and non-Indigenous Australians. In order for remote health professionals in Australia to achieve cultural adaptation, it is important to develop a way in which to measure culture shock. It is only once the rejection stage of culture shock can be effectively bridged that the most appropriate and effective training and support programs can be implemented. However, the empirical literature supporting the concept of culture shock and



providing ways to effectively measure these stages is limited. In particular, research that is specific to non-Indigenous people working in Indigenous communities in Australia is required. It is only with this research that strategies can be developed to assist individuals to achieve successful cultural adaptation, with the ultimate goal of improving staff turnover and the delivery of remote healthcare services.

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Appendix I: Empirical studies retrieved, and their applicability to the selection criteria^{12,25-27,29,42,44-51}

Authors [ref. no.]	Sample	N	Culture Shock Measurement Tool
Yi & Jezewski (2000) [42]	Korean nurses working in USA	12	X
Furnham & Bochner (1982) [12]	International students in England	150	X
Dunbar (1992) [26]	US expatriates	149	X
Dunbar (1994) [25]	German executives in USA, US executives in Japan	42	X
Ruddock & Turner (2007) [44]	Danish nurses working overseas	7	X
Heuer & Bengiamin (2001) [45]	US nursing students on exchange in Russia	7	X
Hammer et al (1978) [46]	US students who had studied overseas	53	X
Babiker et al (1980) [27]	International students in Scotland	121	X
Pantelidou & Craig (2006) [50]	Greek students studying in UK	133	Culture Shock and Social Support Questionnaire
Chapdelaine & Alexitch (2004) [49]	International students in Canada	156	Revised Social Situations Questionnaire (RSSQ)
Ward & Kennedy (1999) [47]	4 samples, incl. international students and volunteers	171 [†]	Sociocultural Adaptation Scale (SCAS)
Mumford (1998) [29]	British 'gap' volunteers working overseas	380	Culture Shock Questionnaire (CSQ)
Matsumoto et al (2006) [48]	17 samples, incl. Japanese & US international students and workers	— [‡]	Intercultural Adjustment Potential Scale (ICAPS)
Zapf (1993) [39]	Social workers in remote Canadian communities	85	Culture Shock Profile (CSP)
Juffer (1985) [51]	International students in the USA	84	Culture Shock Adaptation Inventory (CSAI)

Incl., Includes; X = does not contain.

[†]Total N in the 4 samples; [‡]total N for all 17 samples not given.