Special Care Dentistry in Brunei Darussalam:
What are the experiences of service providers? – A qualitative study

A thesis submitted in partial fulfilment of the requirements for the degree of Clinical Doctorate in Dental Surgery D. Ch. Dent. in Special Care Dentistry

2021

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DECLARATION

I declare that this thesis has not been submitted as an exercise for a degree at this or any other university and it is entirely my own work.

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Dr Hani Ayup
ABSTRACT

TITLE: Special Care Dentistry in Brunei Darussalam: What are the experiences of service providers? – A qualitative study

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Background: The introduction of Special Care Dentistry specialty in Brunei Darussalam provides the opportunity to develop a care pathway for people with disability. However, little is known about how dental services for these groups are organised presently and what barriers and enablers the providers faced in providing dental care services for people with special health care needs.

Aims: To explore and understand the concepts of disability, the current provision of dentistry for people with special care needs (PSCN), and the facilitators and barriers encountered through the experiences of service providers in Brunei Darussalam.

Method: A qualitative research method was used, and data were collected using semi-structured interviews informed by an a priori topic guide. A diverse sample of clinicians, clinical managers and the wider dental team were approached using purposive and snowball sampling. Participants were drawn from primary and secondary care settings. The data were analysed using thematic analysis. Two independent researchers coded the interviews and met to agree on the final thematic framework.

Results: 46 individuals were approached and N=22 interviews were conducted and completed. Of the 22 participants 73% (n=16) were women; n=17 dentists of whom n=6 had specialist qualifications and n=4 had a managerial role, n=3 dental nurses, n=2 were from the wider dental team. The interviews were conducted in two phases: from December 2018 to January 2019 and in August 2019.

Four main themes relating to SCD were identified; ‘Concepts of disability’, ‘The workforce in SCD’, ‘The current provisions of SCD’ and ‘Facilitators and Barriers of SCD’. A broad range of people with disability were acknowledged, however the complexities of the disabilities in terms of impact on function was poorly understood, and there were obvious gaps in knowledge observed. There seemed to be an attributed hierarchy to disability, where older people were revered and some groups appeared to hidden/unseen. Facilitators identified were the primary care focus, structure and organisation in Brunei, their cultural context, medical collaboration and individual clinicians who ‘made things work’ – the problem solvers. Barriers identified were the lack of formal care pathway, lack of reasonable adjustment to people with special care dental needs, and participant’s attitudes and training needs for which their discomfort and fear lead to avoidance in providing care for these group – the avoiders.

Conclusions: The current structure and organisational focus on primary care has the potential for optimal configuration of the provision of service for people with disabilities. However structured training in disability awareness and provision of dental care to people with special care needs is required to support the development of a care pathway in Brunei. Furthermore, there is a need to empower the problem solvers, and to engage and support the ‘avoiders’ to ensure its success.
SUMMARY

The introduction of the specialty of Special Care Dentistry (SCD) in Brunei Darussalam provides the opportunity to develop a care pathway for people with special care needs (PSCN). Little is known about how dental services are organised presently and what barriers and enablers dental providers face in providing dental care services for PSCN.

Aims:

To explore and understand the concepts of disability, the current provision of dentistry for PSCN and the facilitators and barriers encountered through the experiences of dental service providers in Brunei Darussalam.

Method:

A qualitative research method was used, with data collected using semi-structured interviews and *a priori* topic guide. A diverse sample of clinicians, clinical managers and the wider dental team were approached using purposive and snowball sampling. Most interviews were conducted in English, n=19, and n=3 in Malay. Interviews were transcribed to facilitate analysis. Interviews in Malay were translated into English and back translated to ensure quality. The data were analysed using thematic analysis. Two independent researchers; the principal researcher and an experienced researcher coded the interviews and agreed on the final thematic framework.

Results:

The interviews with N=22 participants were conducted in two phases: from December 2018 to January 2019 inclusive and in August 2019. Most participants were women (73%; n=16); n= 17 were dentists of whom n=6 had specialist qualifications and n=4 had a managerial role, n=3 were dental nurses, n=2 were from the wider dental team.

Four main themes relating to SCD were identified; ‘Concepts of disability’, ‘The workforce in SCD’, ‘The current provisions of SCD’ and ‘Facilitators and Barriers of SCD’. Under
‘concepts of disability’, there was an attributed hierarchy to disability, where older people were revered. In contrast, some groups such as those with intellectual disability appeared to be hidden/unseen and few clinicians reported encountering them in daily practice. A broad range of PSCN were described and defined as being in need of SCD, however the complexities of the disabilities and impact on patient’s function and delivery of dentistry was poorly understood. There were large gaps in knowledge.

Within ‘the workforce in SCD’, and ‘the current provisions of SCD’, there was no formal or informal care pathway for PSCN, though individual clinicians ‘made things work’ – the ‘problem solvers’.

Facilitators identified for a care pathway were the primary care focus and the structure and organisation of existing dental services in Brunei; the role of Islam and the family in cultivating a duty of care amongst providers, the introduction of medical departments specifically targeting and reaching PSCN; professionalism and individual ‘problem solvers’. Barriers for a care pathway identified were lack of policies; lack of knowledge and negative attitudes towards providing dental care for PSCN amongst the dental team. The lack of training and mentoring opportunities perpetuated participants’ discomfort and fear which led to avoidance in providing care for PSCN - the ‘avoiders’

**Conclusions:**

The primary care focus of dental care in Brunei has the potential for optimal configuration of services for PSCN. A formal care pathway is required to ensure optimal reach and appropriate access for all PSCN. This should be accompanied by structured training and mentoring of the dental workforce for their role in the pathway. Contextual issues in Brunei such as the role of the family and Islamic culture and attitudes to the disadvantaged, and the presence of individual ‘problem solvers’ presents a good platform on which to build this pathway.
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<tr>
<td>ARCPOH</td>
<td>Australian Research Centre for Population Oral Health, University of Adelaide</td>
</tr>
<tr>
<td>BST</td>
<td>Basic Specialty Trainee</td>
</tr>
<tr>
<td>DDS</td>
<td>Department of Dental Services, Ministry of Health</td>
</tr>
<tr>
<td>DN</td>
<td>Dental nurses, professionals equivalent to New Zealand Dental therapists (scope of practice limited to children only)</td>
</tr>
<tr>
<td>DHT</td>
<td>Dental hygiene and therapist</td>
</tr>
<tr>
<td>DwSI</td>
<td>Dentist with special interests</td>
</tr>
<tr>
<td>GDPR</td>
<td>General Data Protection Guidelines</td>
</tr>
<tr>
<td>JPMC</td>
<td>Jerudong Park Medical Centre</td>
</tr>
<tr>
<td>MOH</td>
<td>Ministry of Health, Brunei Darussalam</td>
</tr>
<tr>
<td>NCD</td>
<td>Non communicable disease</td>
</tr>
<tr>
<td>NDA</td>
<td>National Disability Authority</td>
</tr>
<tr>
<td>NDC</td>
<td>National Dental Centre - a primary and secondary dental care centre</td>
</tr>
<tr>
<td>OP</td>
<td>Outpatient services</td>
</tr>
<tr>
<td>PHC</td>
<td>Primary health care</td>
</tr>
<tr>
<td>POC</td>
<td>Primary oral care</td>
</tr>
<tr>
<td>POCD</td>
<td>Primary oral care dentist (equivalent to general dentist)</td>
</tr>
<tr>
<td>POCN</td>
<td>Primary oral care setting</td>
</tr>
<tr>
<td>POCS</td>
<td>Primary oral care setting</td>
</tr>
<tr>
<td>POCN</td>
<td>Primary oral care providers</td>
</tr>
<tr>
<td>POCN</td>
<td>Primary oral care nurses</td>
</tr>
<tr>
<td>PSCD</td>
<td>Patients requiring special care dentistry</td>
</tr>
<tr>
<td>PSCN</td>
<td>People with special care needs</td>
</tr>
<tr>
<td>RIPAS</td>
<td>Raja Isteri Pengiran Anak Saleha Hospital, Main hospital in Brunei</td>
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<tr>
<td>SCD</td>
<td>Special Care Dentistry</td>
</tr>
<tr>
<td>SDG</td>
<td>WHO Sustainable Development Goal</td>
</tr>
<tr>
<td>SEU</td>
<td>Special Educations Unit, Ministry of Education, Brunei Darussalam</td>
</tr>
<tr>
<td>SRQR</td>
<td>Standards for Reporting Qualitative Research</td>
</tr>
<tr>
<td>TCD</td>
<td>Trinity College Dublin</td>
</tr>
<tr>
<td>UHC</td>
<td>Universal health coverage</td>
</tr>
<tr>
<td>UNCRPD</td>
<td>United Nations Convention on the Rights of Persons with Disabilities</td>
</tr>
<tr>
<td>UN, GA</td>
<td>United Nations, General Assembly</td>
</tr>
<tr>
<td>UN SDG</td>
<td>United Nations Sustainable Development Goals</td>
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1 INTRODUCTION

In Health, Brunei “Vision 2035: Together towards a healthy Nation” aspires for the people of Brunei to have a quality of life that is among the top 10 nations of the world by 2035 (Government of Brunei Darussalam, 2020). This is concurrent with Sustainable Development Goal (UN SDGs) Number Three “Good health and well-being” of the 2030 Agenda for Sustainable Development in ensuring healthy lives and promoting the well-being for people of all ages (WHO, 2015). In line with this vision and SDG, the Ministry of Health of Brunei Darussalam published Strategic Plans 2019-2023 in order to further strengthen the existing healthcare system (2019).

 Provision of dental specialist services was one of the key initiatives identified within the service excellence strategic directives (Ministry of Health, 2019). In 2013, as part of the development of quality dental workforce and integrated care services, Wilson and colleagues (2013) recommended the need for a Specialist workforce to be developed, including Special Care Dentistry (SCD), Gerodontology and Oral medicine in Brunei.

 The speciality of SCD has only been recognised globally over the past two decades and there are still many developing countries where this specialty is still not recognised. While the Ministry of Health provided funding and approval for the training of specialists in SCD in Brunei, the development of a care pathway to access specialist SCD has yet to be established.

 There is a scarcity of existing studies on the best way to establish Special Care Dentistry (SCD) where its provision is not yet established or where the specialty is not yet recognised. In planning dental services for the future, it is important to have an understanding of how existing services are organised (in this case for people with disabilities in Brunei) and identify elements that may act to enhance (facilitators) or impede (barriers) (Chestnutt et al., 2013). Understanding and attitudes to disability are culturally and environmentally dependent, so it is also important to have insight into
existing attitudes to disability amongst the workforce to inform training and mentoring needs.

The aim of this thesis was therefore to explore and understand the concepts of disability, the current provision of dentistry for people with special care needs (PSCN), and the facilitators and barriers encountered through the experiences of service providers in Brunei Darussalam.

This study has been designed to provide preliminary information for the initial development of a care pathway in SCD for Brunei Darussalam and to inform future dental policy, practice and research.

Chapter two sets the context for the thesis by describing health care in Brunei Darussalam and Chapter three reviews the literature informing the study. Chapter four describes the research methods and rationale for choice of study design. Chapter five reports the results which are discussed in Chapter six. Recommendations for policy, practice and research are also presented in Chapter six.
2 SETTING THE CONTEXT

2.1 BRUNEI DARUSSALAM

The Sultanate of Brunei Darussalam is situated on the northwest coast of the island of Borneo with a land area of 5,765 square kilometres (Figure 1). Geographically, Brunei is divided into four districts; Brunei Muara, Tutong and Belait in the west and Temburong in the east as seen in Figure 1. Brunei derives its wealth from crude oil and gas, which results in its high per-capita gross domestic product (GDP) that was estimated by the World Bank to be USD$78,900 in 2017, on a par with Ireland and Norway (Central Intelligence Agency, 2017). Oil and gas make up 90 percent of government revenues and 95 percent of export revenues (Ministry of Health, 2013). Brunei is the second-wealthiest nation in Asia based on GDP per-capita after Singapore, allowing it to be a welfare state. (Ministry of Health, 2013).

Figure 1 Map of Brunei

The breakdown of population characteristics was summarized in Figure 2. Recent population estimates suggest that there were 459,500 people living in Brunei in 2019 (BDKI 2019, 2020), with 97% of the population living in the west. The capital city, Bandar
Seri Begawan is located in Brunei-Muara district, where almost half the population resides. Belait, being the centre of the oil and gas industry is the second most populated district. Temburong in the East is physically isolated and was only accessible via boat or by land through Malaysia, until recently when the Temburong bridge was opened, linking Temburong with Brunei-Muara district (Kon, 2020).

Figure 2 Characteristics of population of Brunei Darussalam (Adapted from Department of Economic Planning and statistics [DEPS], 2020)

Annual population growth is approximately two percent yearly, highest at 3.9% in 2019 (MOH, 2019b). More than 65% of the population are Malay-Muslims with 10.3% Chinese and religion is culturally embedded in daily practices. Brunei has similar changing population demographics as the rest of the world with increasing number of older populations, increasing life expectancy and decreasing birth rates as seen in Figure 3. There was an approximately three percent increase in the population aged above 60
years old; from six percent in 2011 to nine percent in 2017 (MOH, 2019b). There was an overall increase in life expectancy from 75.6 years in 2001 to 77.4 years in 2019 (MOH, 2019b). The population median age in Brunei was low (30.6 years in 2019) which suggested that Brunei has ‘younger’ population. This has implications for the provision of services in Brunei.

![Image](image_url)

**Figure 3** Changing population demographics of Brunei Darussalam
Adapted from Health Information booklet, pp6, MOH, 2019b

### 2.2 Health Care System

Health care in Brunei is heavily subsidized by the government and has established universal healthcare coverage (UHC) for all citizens since 1958. The concept of UHC
includes the three elements of population coverage, the nature of services provided and also out of pocket expenditure (Mathur et al., 2015). Brunei has a relatively high coverage (81% in 2017) of essential health services and relatively low risk of financial hardship, on a par with New Zealand, Japan and Australia (WHO 2018; WHO 2019).

Non communicable disease (NCD) such as cancer, heart disease, diabetes mellitus, cerebrovascular and hypertensive disease are leading causes of death in Brunei Darussalam since the 1990s (WHO, 2017). The Ministry of Health has undertaken a series of actions since 2000 to address these growing concerns by tackling modifiable behavioural risk factors, namely unhealthy diet, obesity, lack of physical activity, and smoking, focusing on dietary policies and interventions, tobacco control and the promotion of healthy lifestyle with primary health care. In 2013, the formulation of the Brunei Darussalam Multisectoral Action Plan on the Prevention and Control of NCD (BruMAP-NCD) 2013-2018 included planned strategies using a whole-of-government and whole-of-society approach. It involved all 13 ministries, private stakeholders and members of society in addressing NCDs effectively.

The health system in Brunei has been a success when measured in global health standards such as UN SDGs and UHC (WHO 2018). However, the Ministry recognizes the challenges in provision of health care including the fiscal burden in increasing health costs; the need for a sustainable health care delivery including workforce development, the demographic change (the increasing number of ageing population with different needs and demands for health care services) and the need to aggressively tackle NCDs through lifestyle changes (MOH, 2019b)

2.3 DELIVERY OF HEALTH CARE SYSTEMS

Health care in Brunei Darussalam, including dental care is provided in three ways; by the Ministry of Health, the Ministry of Defence or privately as seen in Figure 4. The Ministry of Health has been the largest provider of healthcare via government hospitals,
health centres and health clinics. Historically, health care was provided in hospitals only and then slowly progressed into health centres and hospitals in each districts throughout the country. In 2000, there was decentralization of health services from hospital-based into community-based health centres throughout the country. This improved people’s accessibility (defined as a physical proximity) to primary health care (PHC). These PHC services provided holistic health care including dental care, child and maternal health, phlebotomy services and pharmacy. The health centres became the ‘gatekeeper’ to accessing secondary and tertiary care provided in hospitals.

![Figure 4 Structure of health services in Brunei Darussalam](image_url)

To date, there are currently four government general hospitals, 14 health centres, three travelling health clinics and two ‘Flying Medical’ services teams. PHC services are provided free-of-charge to the citizens of Brunei via a large network of health centres and clinics, located throughout the country, as seen on Figure 5. The number of health centres within a particular district corresponds to the number of population. The largest number of health centres are in Brunei-Muara district. In remote areas, health care is provided by travelling clinics (by land) and flying medical services (by helicopter) by a
medical and a dental team. These are areas in south of Tutong and Belait district, for example in Sukang, Melilas, Supon Besar and Mapol.

The main referral government hospital in the country is Raja Isteri Pengiran Anak Saleha (RIPAS) Hospital, located at the capital city. It houses over 30 different specialties and subspecialties in medicine and surgery. The specialized services offered in three of other hospitals are more limited or are provided on a part-time basis. This has enabled provision of both primary oral care and specialized dental care in these hospitals.

There are two private hospitals in Brunei. Both are located in Jerudong which is about 20km from the main RIPAS hospital. Jerudong Park Medical Centre (JPMC) is the only private hospital which provides both primary and specialized health care (Jerudong Park Medical Centre, 2019). It specializes in cardiac diseases (Gleaneagles JPMC). The second private hospital, Pantai Jerudong Specialist Centre consists of three specialist centres, namely Brunei Neuroscience Stroke & Rehabilitation Centre (BNSRC), The Brunei Cancer Centre (TBCC) and Maxillofacial, Facial Plastic and Reconstructive Surgery Centre (MFPRSC). Patients from RIPAS hospital requiring these specialized services provided by these hospitals are referred here at the government's expense. Before its set-up, patients were sent to specialized services overseas such as in Singapore or Malaysia (MOH, 2019b).

There are also private health services available in Brunei through private health centres and clinics as well as private dental care. The supply versus demand imbalance generates high patient load and long waiting times in government health centres. Because of this, those who can afford it, may seek medical and dental care in the 33 private health clinics and 8 private dental clinics throughout the country. These private clinics are usually open outside usual working hours, in the evenings and during weekends, making it more accessible for people to seek care.
Figure 5 Distribution Map of Health Care Facilities in Brunei (HIB, MOH 2017 pp 18)
Lastly, the armed forces have their own medical units under the Ministry of Defence. Their units consisted of eight medical clinics and four dental clinics, providing health care to their personnel and their families (MOH, 2019b).

### 2.4 Dental Services in Brunei Darussalam

As previously mentioned, government services are the main providers for health and dental services. The dental services described henceforth will describe government services only.

Dental services in Brunei have progressed gradually since its establishment in 1950 (DDS, 2011a). Historically, provision of dental care was carried out by one Malaysian dentist in the main hospital. Before that, the people of Brunei used to cross the border to Malaysia for dental treatment. In 1955, dental care for children was carried out using a New Zealand model of trained dental nurses to treat children. This method was practiced in most countries in South-east Asia including Malaysia, Singapore, Indonesia and Thailand (Moffat et al., 2017). These dental services were initiated by two dental nurses from New Zealand who were specifically brought into Brunei and who provided care in hospitals, schools and mobile dental clinics (DDS, 2011a). This strategy of provision of dental care by New Zealand dental nurse for children under 17 years of age is still being practiced today. Hence, the term ‘dental nurses’ in Brunei is referred to as dental auxiliary professionals providing care for children under 17 years of age. The term dental assistants or dental surgery assistants is the equivalent of dental nurses in Ireland. The scope of practice of both dental care professionals is clarified more in section 2.5.

By 1970s, there were hospitals in all districts with dental services, and four health centres across the country. Dental services were also provided in the water village “kampong ayer” which was only accessible by boat. With regards to specialized services, oral surgery was the first specialized dental services available in Brunei. This was provided
by the first local dentist who graduated from Tokyo in 1965. The second specialized service was orthodontics, provided in 1988 by a Malaysian orthodontist.

By the 1990s, there were a total of 30 dentists nationally including 13 local primary care dentists and two local orthodontists and a total of 91 trained dental nurses. The provision of dental services throughout the country were available in all four districts, in three hospitals, five health centres and 28 school clinics.

In 2001, the decentralization of health services from hospital-based to community-based increased accessibility of dental care to the population. Furthermore, the establishment of the National Dental Centre (NDC), located about ten minutes’ drive from the main referral hospital marked a huge development in dental care. This establishment was coupled with the increasing workforce capacity and the introduction of new dental specialties. The NDC acts as both a primary and secondary care centre, housing 27 dental chairs, a dental laboratory, radiology unit, dental administration and serves as a training centre for capacity building of the dental workforce. Some specialist services including oral surgery, periodontics and paediatric specialist care remained in the main referral hospital.

The Oral Health Agenda in 2008 was the first document published on strategic planning for the delivery of dental care in Brunei (MOH, 2008). An evaluation of the agenda in 2012 outlined the challenges and constraints faced in achieving the goals and further planning and more realistic goals were noted to be required to ensure its success (MOH, 2012). The next section will provide a brief overview of oral health status of the people of Brunei, and then describe how the services are delivered and organized.

2.4.1 OVERVIEW OF ORAL HEALTH

Dental caries and periodontal disease are a major public health problem in Brunei Darussalam. Dental caries status in Brunei was amongst the worst in the ASEAN and Asian countries as seen in Appendix 1. 2017 statistics from the Health information
booklet 2017 shows that 'dental caries and teeth related disorders' was the number one cause for attendance in health centres and in hospitals, as compared to other medical causes (MOH, 2017).

To date, there have been three national oral health surveys conducted in Brunei Darussalam, in 1987, 1997 and most recently in 2015-2016 (Table 1). The age groups surveyed were 5-6 years old, 10-12 years old and adults ages 35-44 years old. It would have been useful to assess the younger population (3-year-old age groups) as early interventions of childhood caries is more effective and this could also predict the amount of prevention required in the future in Brunei (McMahon et al, 2010). Similarly, the surveys also did not include the older population (above 45 years of age). These data would have also been useful to provide information for the planning of services (Naseer et al, 2018).

The National oral health surveys have showed significant caries status improvements between 1997 and in 2015-2016. Despite these improvements, when compared to WHO standards, the caries status for children 5-6-year-old were still high (WHO standards - high at >4.4 dmft) and for 35-44 years old has improved from high at DMFT 14.4 (WHO standards >13.9) to moderate at DMFT 9.7 (Moderate DMFT 9 – 13.9). Furthermore, the prevalence of dental caries for adults aged 35-44 years of age are similar in 1999 (98.3%) and in 2015 (99.1%). The prevalence of more than one missing permanent tooth in adults has increased from 44% in 1999 to 68% in 2015. With these figures, Brunei has only just recently achieved one of oral health goals set by WHO/FDI for the year 2000 (no more than three DMFT at 12 years of age) in 2016 (Aggeryd, 1983).

**Table 1 Comparison of caries status in Brunei Darussalam**

<table>
<thead>
<tr>
<th>Year</th>
<th>5-6 year</th>
<th>10-12 year</th>
<th>35-44 year</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>dmft</td>
<td>% caries free</td>
<td>DMFT</td>
</tr>
<tr>
<td>1987</td>
<td>No data</td>
<td>3</td>
<td>4.91</td>
</tr>
<tr>
<td>1999</td>
<td>7.1</td>
<td>11.3</td>
<td>4.82</td>
</tr>
<tr>
<td>2015</td>
<td>5.1</td>
<td>25.9</td>
<td>0.9</td>
</tr>
</tbody>
</table>
Studies have demonstrated the effectiveness of the utilization of dental nurses in the treatment of children where the ratio of extractions to restorations decreased dramatically from 73% in 1925 to 3.6% in 1964. (Mathu-Muju et al, 2013; MOH, 2008). These treatment patterns were also seen in Brunei with a ratio of 63.6 of extracted teeth per 100 fillings in 2005. These numbers seen in 2005 have halved in 2007 and with further preventive and oral health promotion strategies, the oral health of children has improved dramatically, especially for the 10-12-years old (MOH, 2008).

With regards to periodontal health status, it was very difficult to compare between two national surveys as different indices were used. The survey in 1999 utilised the Community Periodontal Index whereas the most recent survey utilised Simplified Dental Debris Index and assessment of periodontal disease by assessing gingival recession, periodontal pocketing and bleeding at three sites per tooth. The 1999 survey showed that there were 65% of adults with periodontal pocketing of more than 4mm (DDS, 2013a). In 2015, the results showed that the prevalence of moderate or severe periodontal disease (defined as periodontal pockets of 4mm or more in two sites) amongst the population of Brunei Darussalam in 2015 was 35.4%. Results showed that there was an improvement in periodontal disease among the adult population.

### 2.4.2 Structure of Services

The department of dental services aligns to the vision “Together towards a healthy Nation” and its mission was “To improve oral health through effective, equitable, affordable, accessible, safe and sustainable Oral Health Care in Brunei Darussalam”. There are four key services in the provision of dental care in Brunei - primary care services, school dental services, specialist care services, and health promotion services. Figure 6 gives a summary of the services.

PHC services are the first point of contact for people seeking oral health care advice or
dental treatment. These services are divided into children under 17 years old and adults. As previously mentioned, dental care for patients under 17 years old are provided by dental nurses (DN) and dental hygiene and therapist (DHT) within their scope of practice (as described later in section 2.5). Patients requiring treatment beyond their scope of practice are referred to dentists. Adult patients are seen by dentists and can be referred to dental hygiene and therapist for treatment with a prescribed treatment plan.

PHC services, also known as outpatient (OP) clinics, are provided in dental clinics located in health centres, hospitals in peripheral districts and the National Dental Centre (NDC). Limited primary care services are also provided in flying/travelling clinics. Patients seeking treatment attend on a first come-first served basis using a numbering system within an allocated time. Services provided on the day range from emergency treatment such as relief of pain including pulp extirpation and dental extractions, management of swelling and dental injuries as well as provision of elective treatments such as dental assessments, tooth debridement, dental restorations, denture repair. Patients requiring further treatment or continuing treatment plan are given an appointment for completion of treatment (Appendix 2).

For patients under 12 years old, PHC services can also be provided in primary schools under school dental services. These can either be carried out in schools with static dental chairs or mobile dental units. Historically, schools with static dental clinics were set up when the population of students at the school was above 500. However, in recent years, with manpower and resources constraints, a population of 1000 students are now required to set up a dental clinic in the schools. Currently a total of 47 out of the 103 primary schools have a static dental clinic (DDS, 2019). For dental schools without a dental clinic, dental care is provided by a team of 5-6 dental nurses or DHT using portable equipment. The strategy aims to examine and provide treatment to at least 80% of the students on the school roll (aged 5-12 years) before moving to another school. In 2019,
83% of government schools in Brunei were covered by school dental services (DDS, 2019).

Presently there are no primary schools dedicated for the education of children with special needs only. These children are educated in mainstream schools. In 2017, there were a total of 98 pre-school and primary schools registered with the Special Educations Unit (SEU), under the Ministry of Education. The dental screening and oral promotion programmes for these group of children with special needs were carried out by the paediatric dental nurses, once every two years and those requiring treatment are referred to their nearest dental clinics. The population coverage of the children with special needs were 64% in 2017 (Paediatric Dental Unit, 2018).

PHC services also act as gatekeepers for referrals to specialist care services, as needed. Patients requiring orthodontic treatment, complex prosthodontic management including full mouth rehabilitations, implant restorations, oral surgery for removal of impacted wisdom teeth, complex endodontic treatments, or complex periodontology management will require stabilization first within primary care services before referral onward to secondary care. Children under 17 years old requiring complex care, for example, trauma management, endodontics of both primary and permanent dentition, rampant caries requiring extraction of multiple teeth under general anaesthetic are referred to a specialist paedodontist. Currently, there are seven dental specialties available in Brunei—Endodontics, Oral surgery, Paedodontics, Periodontics, Orthodontics, Prosthodontics and Restorative Implant dentistry as seen in Table 2 (MOH, 2019b). The most recent specialty available is Special Care Dentistry (SCD), introduced in October 2018.
Figure 6 Structure of dental services in Brunei Darussalam
Table 2 Breakdown of dentists and their specialties (Data retrieved from DDS, MOH Brunei, March 2019b)

<table>
<thead>
<tr>
<th>DENTAL FIELD</th>
<th>2017</th>
<th>2019</th>
</tr>
</thead>
<tbody>
<tr>
<td>*Primary Oral Care (General Dentistry)</td>
<td>46</td>
<td>46</td>
</tr>
<tr>
<td>Orthodontic</td>
<td>7</td>
<td>7</td>
</tr>
<tr>
<td>Paediatric Dentistry</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>Surgical Dentistry</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>Dental Public Health</td>
<td>5</td>
<td>4</td>
</tr>
<tr>
<td>Endodontic</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Prosthodontic</td>
<td>3</td>
<td>6</td>
</tr>
<tr>
<td>Restorative (Implantology)</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Periodontology</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Special Care Dentistry</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>OMF</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>82</strong></td>
<td><strong>85</strong></td>
</tr>
</tbody>
</table>

There has been a steady increase in the utilization of public dental services as dental services expanded in Brunei as seen in Figure 7. However, despite this increase in utilization (as seen in Table 3), the population coverage achieved remained low at 40%. A recent survey reported that the reasons why people did not visit the dentist in the last two years was that they felt there was no need, they had difficulty getting time off work and also the waiting time to be seen (Roberts-Thomson & Peres, 2017). Patients from primary oral care services (adult and children) contributes 82% of attendances from within dental centres and hospitals (See Figure 7).
Oral health promotion services are tasked with reducing the prevalence of oral diseases for the whole population as well as for target populations. Strategies for the whole population include monitoring of water fluoridation, mass media oral health promotion including oral health advice on national television and radio, in addition to oral health talks in the community. There were four targeted population programmes aimed at, antenatal women, toddlers and pre-school children aged six months to five years old and primary school children (from six to twelve years old).
2.5 **DENTAL WORKFORCE**

The current dental workforce in Brunei comprises of dental specialists, dentists, dental nurses, dental hygiene and therapists, dental surgery assistants, dental technicians/technologists and supporting staff such as administrators and receptionists. Table 4 below outlines their general role and their numbers. The breakdown of the scope of practice of dental professionals is shown in Table 5.

Table 4 Roles and numbers of workforce
[Data retrieved from DDS, MOH March 2019]

<table>
<thead>
<tr>
<th>Role</th>
<th>Description</th>
<th>Numbers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dentists OR Dental Officers OR Primary Oral Care Dentists</td>
<td>Completed BDS or equivalent Diagnose and treat diseases, injuries and abnormalities of teeth, gums and related oral structures; prescribe and administer restorative and preventive procedures; and conduct surgery or use other specialist techniques. Dentists are responsible for the supervision of hygienists, therapists and oral health therapists.</td>
<td>46</td>
</tr>
<tr>
<td>Dental Specialists</td>
<td>Dentists who undergone specialist training and are registered to a specialist register Responsibilities of dentist Added roles – supervision of dentists within their specialty</td>
<td>36</td>
</tr>
<tr>
<td>Dental Nurses</td>
<td>Have completed diploma in dental Nursing/Therapy Treats children under the age of 17 only Diagnose and treat diseases, injuries and abnormalities of teeth, gums and related oral structures; prescribe and administer restorative and preventive procedures Refers to dentists or dental specialists for complex dental treatment</td>
<td>71</td>
</tr>
<tr>
<td>Dental hygiene and therapy</td>
<td>Have completed Diploma in Dental hygiene and Therapy OR Bachelor in Oral Health Can perform the role of Dental Nurses Added roles – can treat adults under the prescription of a dentist</td>
<td>36</td>
</tr>
<tr>
<td>Dental Surgery Assistants OR Dental Assistants OR Nursing assistants</td>
<td>Equivalent to dental nurse in Ireland Completed a diploma in dental surgery assisting Assist dentists and dental nurses in their daily clinical work</td>
<td>91</td>
</tr>
<tr>
<td>Dental Technologists OR Technician</td>
<td>Completed Diploma OR Bachelor in Dental Technology No patient contact</td>
<td>34</td>
</tr>
<tr>
<td>Supporting staff</td>
<td>Receptionists and administrators who facilitates administration and patient contact</td>
<td>41</td>
</tr>
</tbody>
</table>
The availability of dental workforce, in sufficient numbers, relevant skills, and at the right locations are essential in the managing and the delivery of dental care services (WHO, 2016). In Brunei, as the oral health needs of the population are high based on high prevalence of oral disease and low population coverage, the demand for trained and skilled manpower is certainly higher than supply to meet this need. The timely and early introduction of skill mix and variety of skillset within its workforce has improved these gaps (Table 5).

Table 5 Scope of practice of dental workforce in Brunei Darussalam

<table>
<thead>
<tr>
<th>Children (under 17 years old)</th>
<th>Dentists</th>
<th>Dental Nurses</th>
<th>Dental Nurses (with post basic periodontology)</th>
<th>Dental Nurses (with post basic paediatrics)</th>
<th>Dental Hygiene and Therapist (DHT)</th>
<th>Dental Surgery Assistant (DSA) / Dental Assistant (DA)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adults</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oral hygiene education</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Dental examination</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Diagnosis</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Radiographs</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Scaling</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Root debridement</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Topical fluoride</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Sealants</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Infiltration anaesthesia</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Nerve block anaesthesia</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Amalgam restorations</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Composite restorations</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Atraumatic restorative technique</td>
<td></td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Preformed Stainless steel crown</td>
<td></td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Pulp therapy (deciduous)</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Pulp therapy (permanent)</td>
<td>●</td>
<td></td>
<td></td>
<td>●</td>
<td>●</td>
<td></td>
</tr>
<tr>
<td>Extraction (deciduous)</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Extraction (permanent)</td>
<td>●</td>
<td></td>
<td></td>
<td>●</td>
<td>●</td>
<td></td>
</tr>
<tr>
<td>Prosthodontics</td>
<td>●</td>
<td></td>
<td></td>
<td>●</td>
<td>●</td>
<td></td>
</tr>
<tr>
<td>Management of trauma in deciduous teeth</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Management of trauma in permanent dentition</td>
<td>●</td>
<td></td>
<td></td>
<td>●</td>
<td>●</td>
<td></td>
</tr>
</tbody>
</table>
Brunei was ranked number 21 highest by the number of dentists in the countries in the Asia-Pacific region, with a total number of 95 dentists for the country’s population. The dentist /patient ration is 23 dentists per 100000 or 3 per 10000 people as compared to other high-income countries (HIC) who have more than 30 dentists per 100000 people (Balasubramanian et al., 2017). The challenges faced in capacity building is largely due to a lack of local workforce education and training provision. Dental professionals are mostly trained overseas in the UK, Australia, New Zealand, Malaysia and Singapore, and mostly under government scholarships. More than 70% of the dental workforce were born in Brunei.

More dental specialties have also been introduced over the past decade (as seen in Table 2). The number of specialists to number of primary care practitioner are almost 50-50, with 46 primary care dentists and 38 specialists.

Over the last decade, training pathways were developed to increase the workforce capacity. Local training for dental surgery assistants (established in 2002) and dental hygiene and therapy (established in 2006) became available with collaboration from overseas dental institutions namely Malaysia and the United Kingdom. Programs for the Bachelor in Dental Surgery has recently been established in 2017 in the University of Brunei Darussalam, which has a similar set up to the Bachelor of Medicine established over a decade ago. In these programs, the students will undergo three years of theoretical training locally and then are sent off to a partner dental school for another three years. However, these training programs are often small, and the numbers are unlikely to meet the increasing demands of service while balancing the numbers of dental professionals lost for example due to retirement or pursuing specialty training. To date, there are still no local training for dental technician/technologists.
2.5.1 **WORKFORCE DISTRIBUTION**

Table 6 shows the breakdown of the distribution of the dental workforce as well as the services available within the facility, including the availability of services such as radiology, dental laboratories, accessibility and also specialist services throughout the country.
<table>
<thead>
<tr>
<th>District</th>
<th>Hospitals / Health Centres (HC)</th>
<th>Number of dental chairs</th>
<th>Services available</th>
<th>Specialties</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>WC accessible</td>
<td>X-ray Facility</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Dental Lab</td>
<td>Cavity Care</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Specialised Dental</td>
<td>Oral Surgery</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Paediatric Dentistry</td>
<td>Implant</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Special Care Dentistry</td>
<td>Periodontics</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Prosthodontic Surgery</td>
<td>Orthodontic</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Orthodontic</td>
<td>Endodontic</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Endodontic</td>
<td>Dental Public Health</td>
</tr>
<tr>
<td>Brunei Muara</td>
<td>RIPAS</td>
<td>10</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td></td>
<td>National Dental Centre</td>
<td>38</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td></td>
<td>Berakas</td>
<td>12</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td></td>
<td>Muara</td>
<td>3</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td></td>
<td>PAPHMWBHC</td>
<td>6</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td></td>
<td>Jubil Perak Sengkurong</td>
<td>5</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td></td>
<td>PAPHRSBHC</td>
<td>3</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td></td>
<td>Pengkalan Batu</td>
<td>3</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td></td>
<td>Jubli Emas</td>
<td>0</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Tutong</td>
<td>PMMPMHAMB Hospital</td>
<td>7</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td></td>
<td>Tutong HC</td>
<td>0</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td></td>
<td>Telisai HC</td>
<td>1</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td></td>
<td>Sg Kelugos HC</td>
<td>1</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td></td>
<td>Lamunin HC</td>
<td>2</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Belait</td>
<td>SSB Hospital</td>
<td>6</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td></td>
<td>Kuala Belait HC</td>
<td>0</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td></td>
<td>Seria HC</td>
<td>5</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td></td>
<td>Sg Liang HC</td>
<td>3</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Temburong</td>
<td>PIHM Hospital</td>
<td>3</td>
<td>●</td>
<td>●</td>
</tr>
</tbody>
</table>

Legend: ● Service available, ♦ Full time services, ◇ Part-time services/Partly accessible, ⌂ Available, but not wheelchair accessible
3 LITERATURE REVIEW

3.1 INTRODUCTION

This literature review aims to illustrate the evidence and review the literature exploring SCD and its provision. It serves to identify and establish the gaps in the literature that this study hopes to address. First, the concepts of disability and impairment are reviewed, followed by how this has been contextualized in dentistry, more specifically SCD. Secondly, a review of SCD as a specialty is presented, to include provision of SCD, its relationship with primary care and how SCD is perceived. Thirdly, a review of the barriers to providing oral health care for people with special needs is provided. Finally, the aims and objectives of this study are outlined.

3.2 CONCEPTS OF DISABILITY AND IMPAIRMENT

There have been inconsistent definitions for disability – either in terms of social policy, access to services, legislation, research and access to benefits (NDA, 2014). The Disability Act 2005 (Ireland) defined ‘disability’ in relation to a person as a ‘substantial restriction in the capacity of the person to carry on a profession, business or occupation in the State or to participate in social or cultural life in the state because of an enduring physical, sensory, mental health or intellectual impairment.’ (pp.6) There has been an implicit assumption that ‘each type of disability’ has specific health, educational, rehabilitation, social and support needs. However, individuals with the same impairment may have very different experiences and needs, hence diverse responses are required (Gallagher and Fiske, 2007, pp.620). This concept of disability as an “evolving concept’ is recognized by the UN Convention on the Rights of Persons with Disabilities (UNCRPD) observing that ‘disability is an evolving concept’ (UNCRPD, 2006, p. 1).
Scrambler and Curtis (2017) recently observed that the definition of disability influences society’s attitudes and behaviour towards people with disabilities ranging from being seen as tragic victims to be ‘cared for’ or as an oppressed group who needed to be empowered (pp.56, 2019). This illustrates debates around two distinct models of disability – the medical model and the social model. In the medical model, the physical or mental impairment is within the person and the disability is a health problem which needs to be eliminated or cured. In contrast, the social model changes the focus from the individual to the society where the disability is proposed to result from barriers in society, for example attitudes and the inaccessible environment (Oliver, 1996). However, this model, while emphasizing societal and environmental barriers, disregards the characteristics and the diagnosis of the individual that may contribute to their disability, for example pain, fatigue, depression and chronic illness. These cannot be overcome by changes in attitude and environmental barriers alone (Goering, 2015).

Taking on these two contrasting models, the World Health Organisation introduced the International Classification of Functioning and Health (ICF) in 2001 (WHO, 2018b). This model emphasizes the interaction between the person and the environment. The ICF describes disability in terms of body functions and impairments, activities and their limitation/restriction, their participation within society, the environmental factors which impacts these experiences and the personal factors. The ICF recognises the dynamic relationship between all these factors. It also implies that ‘disability’ is not an attribute of the person. The ICF has a number of limitations and is not an ideal model. There are arguments for and against the use of ICF (Lundålv et al., 2015). Professionals apply the ICF to describe the individual in a comprehensive and interactive way for empowerment, and also in clinical
practice as an outcome measure, and in research as a method to qualify and quantify outcomes (Dougall et al., 2015). However, the ICF is not ideal as a social policy instrument as the individual classification carries no value in social policy, and the categorization of people with disabilities can lead to marginalization within these groups (Lundälv et al., 2015).

The United Nations Convention on the Rights of Persons with Disabilities (UNCRPD) developed a human rights model based on the social model of disability to protect the human rights and dignity of persons with disabilities (United Nations 2007). This provided a human rights approach towards disability where people with disabilities are protected against discrimination from their disability, rights to have access to reasonable accommodations as well as the application of universal design in all so that there is no need for adaptations and specialized design specifically for people with disabilities (United Nations, 2007). Brunei has signed the UNCRPD in 2007 and was ratified in 2016 (United Nations General Assembly, 2019). Components of the Convention was integrated into the Wawasan Brunei 2035 (Brunei Vision 2035).

Disabilities policies and practices were mostly centred around social and human rights models of disability to promote inclusion (Al Ju’beh, 2015). Disability inclusive development ‘seeks to ensure the full participation of people with disabilities as empowered self-advocates in development processes and emergency responses and works to address the barriers which hinder their access and participation’ (Al Ju’beh, 2015, p. 49). The inclusion of disability in Transforming our world: The 2030 agenda for sustainable development (UN, GA, 2015) in that ‘no one is left behind’ which was previously overlooked in the Millennium Development Goals (MDGs) marked the pivotal change for people with disabilities. This international development goal together with UNCRPD
can be adopted to ensure people with disabilities in Brunei have equitable access to oral health care.

### 3.3 Oral Health and Dentistry for People with Disabilities

As outlined earlier, disability is an ‘evolving concept’ (UNCRPD, 2007, pg. 3) and “disability results from the interaction between persons with impairments and attitudinal and environmental barriers that hinder their full and effective participation in society on an equal basis with others” (WHO & World Bank, 2011, pg. 4). Hence, it is hard to estimate the numbers of people with disabilities or what disability would warrant special care (WHO & World Bank, 2011). Furthermore, patient demographics such as age, the environment and socioeconomic status plays a major influence on disability.

Systematic reviews of studies on disabilities reported major differences in the way each country measure or define disability, the quality and methods of the studies and the reliability of the sources (WHO & World Bank, 2011; Krahn et al., 2015; Rios et al., 2016). These difficulties were also reported in studies pertaining to disabilities and oral health (Ward et al., 2019; Waldron et al., 2019). As an example, studies of people with intellectual disabilities were usually of a small sample and were recruited from dental service users and from Special Olympic athletes (Ward et al., 2019). Furthermore, there were limited studies in some groups of disabilities, for example for people with a visual impairment (Mahoney, 2008). In Brunei, there has not been any survey on the oral health of people with disabilities. The recent National Oral Health Survey of the general population reported poor response rates and did not include people with disabilities (Roberts-Thomson & Peres, 2017).

International evidence has shown that people with disabilities has poorer oral health due to unmet dental needs when compared to the general population.
A systematic review and meta-analysis of eight heterogeneous studies with small samples on oral health and patients with schizophrenia suggests that these group has worse oral health and more oral diseases in these patients compared to the population (Yang et al., 2018). This was attributed to having low motivation for oral health care and not wanting to seek dental treatment; and limited access to dental care (Yang et al., 2018). Ward and colleagues conducted a systematic review on the oral health of adults with intellectual disabilities showing that the prevalence of oral disease and treatment need is still high amongst these groups and that the rate of edentulism was higher than that of the general population despite their regular dental attendance and good oral hygiene (Ward et al., 2019). People with physical disabilities with compromised hand dexterity were reported to have poorer oral hygiene (Jeng et al., 2009). Studies in Australia has shown that people living with mental illness, people with physical, intellectual and developmental disabilities, people with complex medical needs, and frail older people have higher incidence of poor oral health and this was due to the fragmented services in the provision of specialised health care needs (Australian Government, 2015).

The World Disability report stated that with regards to healthcare, people with disabilities are more than twice as likely to find healthcare provider skills inadequate to meet their needs, and nearly three times more likely to report being denied required health care (WHO & World Bank, 2011). This also applies to oral care. These groups are often under-served and experience high levels of unmet need for dental care, with the oral disease they experience often remaining untreated (Watt et al., 2019; Wilson et al 2019; Yang et al., 2019). This need and unmet need for health services exists across the spectrum of
health services in terms of promotion, prevention, and treatment (WHO and World Bank, 2011, pg. 60).

Current literature reports that most dental care for people with disabilities is not complex and potentially ninety percent of patients could be seen in primary care and community settings (JACSCD, 2003a; FDI 2016). The development of this framework of care (Figure 8) where the majority of people with mild and moderate disability are managed by general dental practitioners (GDP), and supported by Dentists with Special Interest (DwSI) in SCD where appropriate, and people with more severe end of the spectrum of disability where to be seen by specialists in SCD was a more accepted approach to reducing oral health inequalities in these population. However, the education and the attitudes of providers needed to be addressed to make this work. Much research has been done for this and will be covered in the later sections on barriers to oral health (Faulks et al., 2012).

Figure 8 The integrated role of Special Care Dentists (JACSCD, 2003a, pg. 56)
3.4 **Definition of Special Care Dentistry (SCD)**

The terms ‘special care dentistry’ and ‘special needs dentistry’ has been used interchangeably (Ettinger, Chalmers & Frenkel, 2006). Although SCD is a relatively new specialty in dentistry, it has been defined in various ways over the years and these alternative definitions are illustrated in Table 7, the common terminology includes notions about ‘oral health’, and listing of the range of disability covered such as: ‘physical, sensory, intellectual, mental, medical, emotional or social’, ‘impairment or disability’ and finally adjustments needed for ‘service delivery’ – an indication that accommodations are required in the provision of dental care for these patients with the various impairment or disability.

<table>
<thead>
<tr>
<th>Table 7 Definition of Special Care/Needs Dentistry</th>
</tr>
</thead>
<tbody>
<tr>
<td>The improvement of oral health of individuals and groups in society, who have a physical, sensory, intellectual, mental, medical, emotional or social impairment or disability or, more often, a combination of a number of these factors.</td>
</tr>
<tr>
<td>Joint Advisory Committee for Special Care Dentistry, 2003</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Special Needs Dentistry is that part of dentistry which deals with patients where intellectual disability, medical, physical or psychiatric conditions require special methods or techniques to prevent or treat oral health problems, or where such conditions necessitate special dental treatment plans.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australian Dental Association 2010</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>The improvement of oral health (through the delivery of treatment and preventive services) of individuals and groups in society who have a physical, sensory, intellectual, mental, medical, emotional or social impairment or disability or, more often, a combination of these factors. It pertains to adolescents and adults</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Dental Council 2012, pp. 3</td>
</tr>
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</table>

<table>
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<tr>
<th>Dentistry for individuals with a disability or activity restriction that directly or indirectly affects their oral health, within the personal and environmental context of the individual. Depending on service structure, people requiring special care may also include persons living in a social, cultural or environmental context that directly or indirectly affects their oral health, in</th>
</tr>
</thead>
</table>
relation to the social determinants of health and to barriers experienced in accessing health care and prevention, i.e. depending on local environmental context (service structure), this population may include patients of all ages, medically compromised patients, prison populations, recent immigrants or refugees, homeless persons, persons with dental fear or phobia, travellers etc. The majority of these patients will receive care in the primary health care sector and a minority with more complex needs will require specialist care.

International Association of disability and oral health (IADH) 2013

The field of dentistry which is concerned with the oral health management of people with physical, intellectual, medical, psychiatric conditions, or a combination of these factors; whose delivery of oral health care necessitate specialised techniques or methods in meeting their complex requirements.

Malaysia Pro-Team Dental Specialty Board (DSB), 2016

The International Association of disability and oral health (IADH) definition is more encompassing as it applies the International Classification of Functioning, Disability and Health (ICF) framework in describing the dental care needs of the individuals and groups (IADH, 2013). The ICF recognises the multi-dimensional concept of functioning and disability including factors that could impact an individual's oral health and also allows the barriers to access to be identified – (whether individual or environmental barriers) and may enable reduction in inequalities in oral health care.

Faulks and Hennequin (2006) identified three groups with special needs in relation to oral health based on the ICF classification;

1. Persons who experience disability due to impairment of oral function or/and structure and who are limited in their activity or participation directly by their oral status, for example malnourished people due to difficulty eating from the presence of dental pain.
2. Persons with a health condition that has direct and indirect repercussions on their oral health, for example people with diabetes mellitus at risk of periodontal disease.

3. Persons whose oral health is negatively affected by their social, environmental or cultural context, for example people with low socioeconomic status who live in rural areas and cannot access dental services or cannot afford dental aids for daily oral care.

The use of ICF classification takes into account of the individual personal and environmental context, so this would mean that some patients may require special care dentistry all their life or in some certain time only or even not at all.

Presently, there has not been an agreed definition of SCD in Brunei. This research will however explore how dental service providers view SCD and people with special health care needs. For the purpose of consistency in reporting in this thesis, special care dentistry (SCD) will be used by the researcher throughout.

3.5 SPECIAL CARE DENTISTRY AS A SPECIALTY

There has been ongoing debate regarding recognizing SCD as a specialty (Ettinger & Chalmers, 2004). While most embraced the need for SCD to be recognised to reduce inequalities in provision of dental care for people with a range of specialised oral healthcare needs and management through formalised training and professional development in this field (Chalmers, 2001; Fiske, 2010), others were concerned that the introduction of the specialty can generate referrals of any person who had a ‘disability’ label (Owens et al., 2010b). This ‘stimulation of referrals may restrict choice and inclusion’ (Owens et al., 2010b, p. 4). The concerns about dental professionals not looking after people with disabilities was shared by Waldman who believed that reluctance
of provider to treat people with disabilities was brought about by decreasing dentist-to-population ratios, the increasing part-time workforce and clinical time, limited training, limited financial initiatives and changing practice dynamics was the result of provider’s refusal to treat (Waldman, 2006). However, in view of increasing elderly population and children with disabilities transitioning to adulthood, the care of these group should be “Let us all do it!”, whether the specialty is recognised or not. (Waldman 2006, pg. 1022).

To date, SCD is still not recognised as a specialty in the U.S. (NCRDSCB, 2020). In countries like UK, Australia, New Zealand, Brazil and most recently Malaysia, SCD is recognised as a specialty (Faulks et al., 2012; Hamzah, 2012). In other countries such as United States of America, Ireland and Japan, SCD continued to be unrecognised despite having dental education on SCD to postgraduate level (Faulks et al 2012). Presently, while Brunei recognised SCD as a specialty in 2010, there was only one newly qualified specialist in SCD in 2018 currently there (MOH, 2010).

3.6 THE PROVISION OF SCD – EXISTING MODELS OF CARE

Globally, various models for the provision of SCD were reported (JACSCD, 2003; Gallagher & Fiske, 2007; Glassman et al, 2005; Hamzah, 2010; Ministry of Health, 2006). Australia, New Zealand and the U.K. were considered as the global leaders of SCD (Schnider, 2008; Gallagher & Fiske, 2007). Early recognition of SCD as a specialty allowed them to develop a clear scope of practice, established career pathways and professional development in SCD, and their oral health policies targeted vulnerable groups (those requiring special care) with regards to accessible dental services. Within these models, SCD are typically publicly funded and were provided by an integrated network of care involving primary dental care practitioners, dentists with special interest
(DwSI) and Specialist in SCD. As mentioned in Section 3.3, the majority of dental care in SCD were provided by primary dental care practitioners and DwSI in general dental practice and also in community settings including domiciliary services. Complex cases will then be referred to specialists, as secondary or tertiary care, either in hospital or in community settings. These networks of care were in place to ensure that primary dental care practitioners are supported in their provision of routine dental care through the availability of specialist support and advise as required (JACSCD, 2003a).

In contrast, in the U.S., where SCD was not recognised as a specialty, all general dental practitioners were required to provide SCD to the vulnerable population (Waldman, 2006). These western model of SCD provision emphasized that a clear scope of practice of providers was required, the building of specialist workforce as well as the skill-building of general dentists were essential in the success in the development of SCD services.

### 3.7 Barriers to Oral Health Care

Barriers to health care essentially means lack of access to health care. The concept of access has been widely discussed and multiple models of access has been introduced over the years to attempt to simplify the complex, multifaceted, multidimensional phenomena of access to health care (Anderson & Newman, 1972; McKinlay, 1972; Pechansky & Thomas, 1981). While the wider social determinants of health should be acknowledged and recognised as a factor in individuals accessing care, the utilisation of access and the corresponding health resources in a supply and demand approach are usually considered (Dahlgren & Whitehead, 1991). Barriers to accessing health services can arise from the demand side (factors that influenced individual, household or community to utilize services) or from the supply side (factors
which in the health system that stops service users to utilize the services) (Jacobs et al., 2011). With reference to supply and demand, Cumella and colleagues further divided the barriers to health services can be into four broad categories which were in reference to (1) the individual (Micro Level), (2) the dental profession (Mesa level), (3) The society (Mesa level) and finally (4) the government (Macro level) (Cumella et al., 2000).

There is a wealth of literature describing the barriers to oral healthcare for people requiring special care dentistry (Williams et al., 2015; Baart & Taaka, 2018; El-Yousfi et al., 2019). These barriers identified in the literature in accordance with these categories are summarised in Table 8.

<table>
<thead>
<tr>
<th>Barriers with reference to;</th>
<th>Barriers reported</th>
<th>References</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patient</td>
<td>Fear and anxiety; Lack of perceived need; Inability to articulate need; Reduced expectations; Cost of treatment/hidden costs such as transport; Stigma; Lack of motivation; Lack of trust towards providers; Lack of access</td>
<td>Williams et al., 2015; El-Yousfi et al., 2019; Baart &amp; Taaka, 2018</td>
</tr>
<tr>
<td>Professional</td>
<td>Lack of knowledge and expertise; Hesitation or lack of confidence; Treatment can be time consuming; Challenging behaviours; Lack of training and experience; Possible waiting room disturbances; Difficulties with access to surgery; Inappropriate manpower resources; Uneven geographical distribution; Insufficient sensitivity to patient attitudes</td>
<td>Dao et al, 2005; El-Yousfi et al., 2019; Baart &amp; Taaka, 2018</td>
</tr>
<tr>
<td>Society</td>
<td>Insufficient public support of health-conducive attitudes; Inadequate oral health facilities; Inadequate dental professional's manpower planning; Insufficient support for research</td>
<td>Cumella et al., 2000; Dougall &amp; Fiske, 2008a</td>
</tr>
<tr>
<td>Government</td>
<td>Lack of political will; Inadequate resources; Low priority</td>
<td>Dougall &amp; Fiske, 2008a; Baart &amp; Taaka, 2018</td>
</tr>
</tbody>
</table>
3.8 STUDIES ON THE PERCEPTIONS OF SCD

3.8.1 DENTAL STUDENTS’ PERCEPTIONS ON SPECIAL CARE DENTISTRY

Students in dentistry are the future service providers in Special care dentistry (Faulks et al., 2012). Numerous studies have shown that education and training in Special Care dentistry in their undergraduate years play an important role in the willingness of the dental workforce in providing care for those requiring special care and hence reducing inequalities of care (Alkahtani et al., 2014; Dao et al. 2005; Derbi & Borromeo, 2016; Wolff et al., 2004; Jones & Miller, 2018). Furthermore, Faulks et al in 2012 placed emphasis on the need of the development of internationally agreed guidelines in Special Care Dentistry in both undergraduate and postgraduate training to ensure students have the necessary skills, competence and confidence.

3.8.2 DENTAL PROFESSIONAL’S PERCEPTIONS ON SPECIAL CARE DENTISTRY

Several studies with regards to the perceptions of dentists providing care for people with disabilities were also available. A survey among general dentists in Michigan highlighted that general dentist require support in managing people with intellectual disabilities, including structured continuing professional development (Byrappagari et al., 2018). In another study, professionals viewed communication as an important key to successful care as well as the consistency of having the same dentist over time (Grant et al., 2004).

3.8.3 PEOPLE WITH DISABILITIES’ PERCEPTIONS ON SCD

Studies on people with intellectual disabilities reported that patients value having a dental workforce who were knowledgeable about the disabilities and the issues that they have, including having access to information to empower shared decision-making and a dental home closer to their residence (Macgiolla Phadraig et al., 2015). The importance of information-sharing and
communication were also reflected by other studies (Lee et al., 2017; Blaizot et al., 2017).

In a qualitative study on the perceptions of people who are full time wheelchair users it was reported that the key issues were problems finding a dentist and being accepted and interacting with the dental staff (Rashid-Kandvani et al., 2015). Similar to people with intellectual disabilities, this group finds difficulty in finding a dentist who would treat them, and they were often refused even when they already presented themselves in the dental clinics. Although communication was not a problem for this group, they reported the design of the dental surgery, for example narrow hallways and high reception desks made it difficult for patients to interact. In addition, these group highlighted the challenge of organizing transportation, the difficulty in entering the building and circulating inside the dental facility. Barriers to accessing the dental chair were also mentioned, for example, issues on transferring into a dental chair that was not designed at wheelchair level and lack of any support equipment or support from dentists generated discomfort and embarrassment on the patient’s part. Dentists lack of awareness or lack of empathy about lengthy treatment episodes was also an issue. Lastly cost of treatments was also mentioned as a barrier to dental care.

3.9 Summary of Literature Review

There was a paucity of literature to inform the introduction of specialized services for people with disabilities. Existing models of care in SCD were based on a western model and may not be appropriately adopted by a country with a small dental workforce and different culture such as Brunei. Prior to planning a service, Chestnutt and colleagues (2013) recommended baseline mapping
However, there were still several key information missing in order to conduct this.

Firstly, Brunei’s recent national oral health survey, did not include people with disabilities but reported that the oral health diseases and disorders were common in the Brunei population (Roberts-Thomson & Peres, 2017) and was among the worse in Asia (Pitts et al., 2011). The current literature suggests that people with disabilities have poorer oral health and unmet dental needs compared to general population (Yang et al., 2018; Australian Government, 2015). It is prudent to assume that that the people with disabilities in Brunei also have very poor oral health and unmet dental needs when as is the case in other countries and considering the oral health of the general population in Brunei is amongst the worse in Asia.

Secondly, little is known about the population needing special care dentistry in Brunei, who they are and how they access dental care. Thirdly, studies on the perceptions of SCD among dental providers emphasized the role of providers in the success of the provision of SCD (Faulks et al 2012). Hence, the views of Brunei’s dental workforce, particularly the primary oral care providers, specified in the literature as the main providers of people with disabilities, was indicated as an initial step before mapping the baseline to the introduction of the special care dentistry services (Faulks et al., 2007; Scambler et al., 2011; Chesnutt et. al., 2013).
3.10 AIMS AND OBJECTIVES OF STUDY

3.10.1 STUDY AIMS

To explore and understand the concepts of disability, the current provision of dentistry for people with special care needs (PSCN), and the facilitators and barriers encountered through the experiences of service providers in Brunei Darussalam.

3.10.2 STUDY OBJECTIVES

1) To explore how SCD is defined by dental service providers,

2) To understand, from the perspectives of dental service providers, who requires SCD and the reasons for this

3) To explore dental service providers’ experiences in providing dental care to people with special needs

4) To identify the facilitators and barriers in their provision of dental care to people with special needs
4 METHODS

This research required an in-depth understanding of service providers’ view and attitudes towards the dental care for people with special needs. These views and attitudes are complex and layered and have nuances that a traditional quantitative way of data collection would fail to uncover. Hence a qualitative study design was adopted as it was more appropriate to the research question.

4.1 QUALITATIVE STUDY DESIGN

This qualitative research design was based on the constructivist epistemology, where scientific knowledge is constructed by individuals providing subjective meanings to their experiences. The design used an inductive, holistic phenomenological approach where it ensured all the perspectives of individuals who have experienced the phenomenon were included to ensure a comprehensive description to the study. It was chosen because it involved a flexible approach in exploring the ‘how’, ‘why’ and ‘what’ of the research question, data typically collected in the participant’s setting through on-going interaction in an effort to ‘seek’ the meaning of particular complex phenomena from the perspectives of the service user. These particulars were ‘inductively’ built to general themes, with the researcher making interpretations of the meaning of the data in a ‘constructivist’ way (Ritchie et al., 2014: Robson & McCartan, 2016). In contrast to traditional quantitative methods applied in dental sciences, this approach provided an in-depth understanding of the delivery of Special Care Dentistry through the experiences of service providers in Brunei Darussalam. It also allowed analysis of the emotional aspects and the personal feelings of the participants (Creswell, 2014).
4.2 SAMPLING AND SETTING

Sampling in qualitative study uses a different approach when compared to quantitative research. Whilst quantitative research relies heavily on the number of participants recruited, qualitative research is more concerned with the characteristics of the participants. This includes a wide variety of participants, from different settings and with different experiences, who contribute to the construction and the depth of meaning to the research question (Creswell, 2014). This approach is acknowledged as appropriate as there is a need to identify ‘key informants’ based on their expertise and potential productive contribution. They are more likely to provide a rich insight and understanding for the researcher (Marshall, 1996). Furthermore, this diversity allows identification of central themes that exist across the sample and in the different settings from which the participants are obtained (Ritchie et al., 2014). This enables the data collected to be rich, robust, diverse, comprehensive and well-developed (Patton, 1999).

Two methods of sampling were used in the present study: purposive sampling and snowball sampling. Purposive sampling was utilized to ensure the diversity of the recruitment sample and to identify the key informants needed. A sampling matrix was used to achieve this. These participants recruited through purposive sampling were also asked during their interviews with regards to potential colleagues who could contribute to the study. These identified participants were later recruited through snowball sampling (Onwuegbuzie & Leech, 2007). This method of snowball sampling was utilized to ensure the completeness of data collected.

The settings involved are illustrated in Figure 9 and approvals for requests to conduct research within the following settings were sought;
1. Department of Dental Services (DDS), the Ministry of Health, Brunei Darussalam (Appendix 3)
2. Dental Unit, the Ministry of Defence (MOD), Brunei Darussalam (Appendix 4)
3. Private Settings
   a. Jerudong Park Medical Centre (JPMC) (Appendix 5)
   b. Panaga Medical Centre (Appendix 6)
   c. Private General Dental Practitioners

4.3 CHARACTERISTICS OF SAMPLE

The diverse participant sample included:

- Managers who had a role in changing service delivery (policy makers) e.g. head of clinical units (primary care, paediatric dentistry, dental public health)
- Clinicians providing service e.g. dentists, dental specialists, dental hygiene and therapists
• Oral healthcare professionals who enabled and facilitated provision of care e.g. dental nurses
• Support staff who facilitated care e.g. receptionists

As discussed in Section 2.5, Brunei Darussalam has a unique dental workforce where the clinicians were qualified from various international dental institutions. These diverse characteristics of the workforce in Brunei were illustrated in Table 9. This included their place of training, the years of service, their posts/responsibilities and their work settings. It was important that the sample recruited reflected the diversity of training experiences of the dental workforce in Brunei.

Table 9 Characteristics of workforce in Brunei Darussalam

<table>
<thead>
<tr>
<th>Workforce</th>
<th>Place of training</th>
<th>Staff</th>
<th>Role</th>
</tr>
</thead>
<tbody>
<tr>
<td>MOH</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dentist</td>
<td>● ● ● ● ● ● ● ● ●</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BST trainee</td>
<td>● ● ● ●</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Senior Dentist</td>
<td>● ● ● ● ● ● ● ●</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Specialists</td>
<td>● ● ● ● ● ● ● ● ●</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dental Hygiene and Therapist</td>
<td>● ● ● ● ● ● ● ● ●</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dental Nurses</td>
<td>● ● ●</td>
<td></td>
<td></td>
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<tr>
<td>Dental Surgery Assistants</td>
<td>●</td>
<td></td>
<td></td>
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<tr>
<td>Receptionist</td>
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<tr>
<td>MoD</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Dentist</td>
<td>● ● ●</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Private</td>
<td>Dentist</td>
<td>● ● ●</td>
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</table>

Senior dentist - (completed BST/worked >7years) staff
● denotes the presence of the characteristic within the workforce
4.3.1 **Sample size**

In this study, the sample size was determined when 'conceptual density' and data saturation was achieved. This is where the researcher had reached sufficient depth of understanding that allowed the researcher to build a theory (Nelson, 2016) and where no new themes emerged (Richie et al., 2013).

4.4 **Inclusion and exclusion criteria**

4.4.1 **Inclusion criteria**

All dental service providers in both government and non-government settings who provide or facilitate dental care.

4.4.2 **Exclusion criteria**

Non-permanent service providers (e.g. on placement, attachment) and staff who did not work directly with patients, for example dental technologists.

4.5 **Ethical approval**

Ethical approval for this research was sought through Faculty of Health Sciences Research Ethics Committee, Trinity College Dublin (Reference No 180403; Appendix 7) and the Medical and Health Research and Ethics Committee, Brunei Darussalam (Reference no MHREC/MOH/2018/6(1); Appendix 8). Minor ethical issues that may arise in the study were identified, particularly on the recruitment of participants, confidentiality and obtaining informed consent.

4.5.1 **Pressure to participate**

In the issue of recruitment, some participants involved were potentially colleagues of the researcher and pressure to participate in the study was probable. Hence, recruitment was done via a third party to avoid this.
4.5.2 CONFIDENTIALITY

As stated earlier, Brunei has a very small dental community, and anonymity may be difficult to achieve. This could have caused issues around confidentiality. All steps were taken to ensure confidentiality was kept – from recruitment of participants, pseudonymism of data collected and the storage of data (Data Protection Commissioner, 2018). All recordings and transcriptions were encrypted and consent forms containing participant identification details was stored separately from the transcribed data, in a locked cabinet in a pass-card section of Dublin Dental University Hospital. Transcribed data were coded and pseudonymised by a specific number only known by the principal researcher. Soft copy data were stored on an encrypted laptop computer, held by the principal researcher. The computer as well as each file containing data were password protected. All data are intended to be stored securely for a period of 5 years, after which it will be destroyed as per Trinity College Dublin research governance guidance (Data Protection Commissioner, 2018; Trinity College Dublin [TCD], 2019).

4.5.3 INFORMED CONSENT

Consent was also one of the ethical concerns in the study, with regards to the nature of the study, any sensitive issues that may arise, the benefits and risks of participating in the study, the confidentiality of any information enclosed and the sharing of research information. This was addressed prior to data collection. The researcher went through the participant information leaflet (Appendix 9) outlining all the issues and gave ample time for participants to ask questions regarding any concerns. Participants were reminded that the interview was not to test their knowledge but to gather information on their views and experiences. Participants are also informed about the confidentiality of their participation, their voluntary participation and their right to withdraw from the study. Once all
questions were addressed, a consent form (Appendix 10) was completed and signed.

During the study, General data protection regulation (GDPR) legislation was introduced, and the researcher was obliged (legislation and TCD) to re-consent the participants who were involved in the first phase of data collection. The consent form was edited as per guidelines (TCD, 2019). The editions included explicit consent on the process of participant’s personal data (anonymised) and the transfer of data internationally (Appendix 11).

4.6 IDENTIFICATION, APPROACHING AND RECRUITMENT OF PARTICIPANTS

Once ethical approval was obtained, a list of service providers was obtained through a published list from the Brunei Medical Council and the directors of services. Eligible participants were identified from a list using the criteria described above. Information on the study was sent via a gatekeeper, a clerk working within the dental organisation in Brunei Darussalam, who had no power over the participants.

An e-mail or a letter (if no e-mail access was available) was sent to the participants inviting them to participate in the study by the gatekeeper (Appendix 12), together with a participant information leaflet (Appendix 9) and a link to a google form to denote their participation (Appendix 13) which included their preferred mode of communication. The invitation to participate, participant information leaflet and consent form were bi-lingual; both in English and in the local language, Malay for ease of understanding and maximum participation.

Participants were given a period of four weeks to respond to the invitation (TCD, 2014). A gatekeeper issued reminders via a phone call or text message one per week before the deadline if there was no response. Participants who agreed to participate were contacted by the researcher and an interview was arranged.
4.7 INTERVIEWS

In this study, semi-structured in-depth independent interviews were carried out to fulfil the aims and objectives of the study. The method of data collection was chosen on the basis that participants were individuals who actively construct their social world. Interviews gave them the opportunity to communicate these views in an unrestricted, expansive, and iterative way that was not limited by closed questions (Ritchie et al., 2012). Brunei’s dental service provider community is small, and members may know each other quite well and issues in status or power may be present. Hence, one-to-one interviews were preferred, as opposed to focus group interviews, as participants were more likely to express their honest and personal thoughts without the other members of the dental community present.

4.7.1 TOPIC GUIDE AND PILOTING OF CONDUCT OF INTERVIEW

For naturalistic research, qualitative interviewing is viewed as guided conversations for which the researcher elicits depth and details of the research topic by probing and following up the participants' responses. A semi-structured topic guide (Appendix 14) was developed from the literature review a priori and from discussions with the researcher’s supervisors who are both specialists in the field of SCD and have experience in qualitative research. The guide encompassed 5 key areas;

1. The definition of Special Care Dentistry
2. The group of patients requiring Special Care Dentistry
3. The issues that arise in treating this group of patients
4. The barriers of providing care in their experience
5. The facilitators of providing care in their experience
The researcher received training in qualitative interviews prior to piloting and the main study (29th March 2018). The topic guide was then piloted to ensure comprehensibility and the focus of research questions. This provided an opportunity to refine the researcher’s skills in conducting an interview bilingually and to improve her interview skills (Hunt et al., 2011; Larkin, 2007). The pilot interviews also refined the researcher’s skills in active listening, to be at ease in the development of non-leading questions, to allow in-depth explanation and to overcome discomfort in asking probing questions (Ritchie et al., 2012).

Interviews in English were conducted with the researcher’s supervisor (CMGP) and an experienced senior dentist from Brunei. Bilingual interviews were carried out with a retired dental specialist and a receptionist. Feedback on the researcher’s interview skills was then given by both pilot participants. With regards to the researchers’ conduct during the pilot interviews, participants commented that the researcher should be more relaxed and to be more naturally inquisitive in asking questions.

Transcripts of the interview were assessed by the research team and discussions on the questions asked, the flow of interviews and suggestions about subsequent and follow-up questions from the participant’s answers. Inclusion of scenarios as prompts to allow natural flow of conversations were added to the topic guide (Appendix 15). Some questions were also reworded to make it clearer for the participants. This topic guide was built inductively as the interview progressed to ensure further in-depth coverage of emerging themes. This approach continued throughout the main study.

4.7.2 Interview Settings

In the main study in Brunei, the interviews were arranged during lunchtime or after working hours on a working day, to minimize disruptions to participant’s working hours (Creswell, 2013). Lunch or afternoon tea refreshments were
provided as an incentive and this provided an informal atmosphere. All interviews were done in a private space, in a place of convenience to the participants. Most of the interviews were done in the offices of their workplace.

4.7.3 INTERVIEW STAGES

In the qualitative interviews, the researcher utilized methods described by Rubin & Rubin in 2012 to shift the dynamics of an everyday superficial conversation to a deeper interaction focusing to a level where it has not been explored before.

First, a positive initial encounter was established by the researcher introducing herself, thanking the participants for their participation, having casual conversation on how much time was available and generally attending to participant’s comfort. All participants were comfortable with the venue and time chosen.

Then the researcher went through the consent process as described in Section 4.5.3. Once all the introductions and consent forms were completed, participants were asked informal questions about themselves using terms such as “Tell me about yourself” as an opening line, easing the participant into the interaction and subsequently collecting contextual information about the participants. This was then followed by the topic guide, but flexibility was allowed into the depth of issues raised by each participant with prompts such as “tell me more about that” or “can you give an example of that”.

The interviews lasted between 40 – 90 minutes. All interviews ended on a positive note and the researcher summarized what had been discussed during the interview and checked for clarification. The researcher thanked the participant again for their participation and listened out for any feedback.
4.8 RECORDING

All interviews were recorded with two separate digital recording systems to ensure no loss of data. A trial recording was done on each interview to ensure clear recordings (Britten, 1995). Participants were informed that the recordings could be paused at any time, as directed by them for any reason. Some additional recordings were undertaken when any ‘doorstep data’ emerged and were deemed relevant. ‘Doorstep data’ was any data mentioned by the participant after recordings had been concluded, and both the participant and researcher felt that these data were important to be included in the study, for example, a participant mentioned that SCD placements in their undergraduate training was optional and she had opted for it. At least two other additional recordings were done for relevant data. Video recordings were not considered necessary in this study.

4.9 TRANSCRIPTION

All interviews were transcribed verbatim by the researcher. Use of a professional transcription service provider was not appropriate as most of the interviews were undertaken bilingually. Interviews done completely in the local language were translated and back-translated with the help of an information officer who was an expert in national dissemination of information bilingually and using the application of a “multifaceted reflection” method (Larkin, 2007, pp474). This method was done to ensure the meaning conveyed through language or expressions used by the participants was not lost during the translation. Translation into English was necessary to enable the supervisors to analyse data and assist with the development of codes.
4.10 Data Analysis

The Framework Method was used to organise the transcribed data (Ritchie et al., 2014), with a thematic analysis approach used for analysis. This approach enabled themes to be developed both inductively from the experiences of research participants and deductively from the existing literature. Participant responses were explored, unique cases discussed through regular meetings with supervisors and an agreement of themes was achieved. The five steps of data analysis using Framework method is described below.

Step 1: Familiarisation

The first step involved reading and re-reading of interview transcripts thoroughly to achieve familiarisation and understanding with the text, identifying topics of interest, recurrent across data set and derived from the research questions and from the topic guide. The identified themes and concepts generated labels for sorting and comparison of data.

Step 2: Constructing an initial framework

For the first few transcripts, the researcher and both supervisors met up and compared the labels they have applied to passages of text. The labels were sorted into a list and compiled into a hierarchy of themes and sub-themes. This development of an initial framework served as matrix to index and sort subsequent transcripts. Further meetings were arranged to revise the initial framework to incorporate new and refined labels. This process of revisiting, addition and refining of labels was repeated until no new labels were generated.

Step 3: Indexing and sorting the data

With the initial framework in place, transcripts were labelled or indexed to the framework. Then, the indexed transcripts that described similar meanings were
sorted into categories. This allowed effective storing and organization of data to allow accessibility during the analysis process.

Step 4: Data summary and display

Microsoft excel was used to display the Framework Matrices. Summarised thematically sorted data was entered into the excel spreadsheet which comprised of one row per participant and one column per subtheme. A separate sheet was used for each theme. Some summarised data from transcripts were in the form of illustrative quotations.

Step 5: Data interpretation

The matrix was then reviewed. Characteristics and differences within the data was identified, and connections were made within and between the participants and categories. Themes were generated, influenced both by the research objectives and by inductive emerging data. The researcher tried to go beyond descriptions of individual cases to uncover broader meaning and implications. An exploration and scrutiny of the data was discussed with researcher’s supervisors to achieve this.

4.11 DATA REPORTING

Detailed descriptive and interpretive analysis was reported in accordance to the standards of reporting qualitative research (SRQR) as described by O’Brien and colleagues in 2014. Summary of the report is provided in Appendix 16.

4.12 RESEARCHER CHARACTERISTICS AND TRAINING

The lead researcher was a primary care service provider who had a decade of experience working in Brunei Darussalam and she worked as a Primary care service manager for 5 years before pursuing further studies. At the time of this
research, she was a postgraduate student in Special Care Dentistry in Trinity College, Dublin. As mentioned before, Brunei has a small number in its dental service provider workforce and being part of the dental unit for over 10 years, the researcher has had experience in working closely with almost all the participants involved – this brought both advantages and disadvantages. As an advantage, the researcher was able to create a comfortable environment that made the participants to open up and be honest about their views. However, some participants who have worked under the researcher needed more reassurance in that their views will be anonymised and that no consequences would arise from it.

With regards to training, as part of her postgraduate degree, the lead researcher undertook a module in applied research methods in University College Dublin (UCD), Ireland under Dr Suzanne Guerin, an Associate Professor in research design & analysis. The applied research method introduced the range of research methodologies that are available in both qualitative and quantitative research and its application in real world research, as well as developing skills in critically evaluating research. Furthermore, the researcher enrolled in Advanced qualitative design module which was also conducted in UCD to further enhanced her knowledge and skills in the principles in qualitative research and critically evaluate common approaches to qualitative design and analysis. Additionally, the course also provided a platform to engage with other qualitative researchers, exchange and discuss the methods they propose and provided an opportunity for the researcher to be assessed in interview skills and thematic analysis.
4.13 RIGOR AND QUALITY

Throughout the process of the study, the researcher was vigilant to ensure rigor was practiced. This was done through these four criteria – credibility, transferability, dependability and conformability (Lincoln & Guba, 1985). Transcript accuracy was carried out to ensure credibility and dependability of data collected. This was done by listening back to audio recordings. Peer debriefing was also conducted through meetings and discussions with supervisors who were experienced in qualitative research, allowing questions and critique on research process and the field notes. Both supervisors also reviewed the transcripts and validated the themes and meanings that emerged. Triangulation of sources was achieved by comparing and cross-checking data within and across the groups of participants to ensure that the accounts obtained were rich, robust, comprehensive and well-developed. Other methods to ensure credibility of data can include member checking where the transcripts can be shared with the participants for respondent validation and also by triangulation of data through different methods of data collection such as quantitative data. The researcher referenced and adhered to the standards for reporting qualitative research (SRQR) throughout the study (Appendix 16) (O'Brien et al, 2014).

Using purposive and snowball sampling methods, providing thick descriptions illustrating the themes and meanings from the participants as well as robust data ensured the transferability of the research to other times, settings, situations, and people (Cypress, 2017).

4.14 REFLEXIVITY

It is recognized that the personal characteristics of the researcher and their relationship with participants can introduce bias in research and should be
acknowledged through meticulous reporting (Ritchie et al., 2014). A reflexivity
journal was kept detailing researcher’s assumptions and beliefs about each
participant, her emotional connection towards them as well as the influences of
the physical environment in which the interview was conducted. This self-
reflection allowed the researcher to be aware of her prejudices and
subjectivities, bracketing her thoughts, hence improving the confirmability of the
research.

During data collection, researcher adhered to the semi-structured interviews
questions and also allowed participants to guide the interviews in what they
thought were important. The journal illustrated how the researcher’s view
regarding the research changes over time. This was clear from the iterative
process of analysis and interpretation. As the researcher’s SCD training
developed, researcher was able to identify the groups of PSCN. This allowed
the researcher to recognise the lack of groups of patients with moderate to
severe complexity being seen throughout the service and recognised that there
appeared to be a hierarchy among PSCN groups. Further training also allowed
researcher to appreciate how the established primary care services in Brunei,
despite the lack of specialist in SCD, could be developed into an ideal platform
for PSCN.

Any bias in data interpretation was limited through engaging two other
independent researchers to code data and also in reviewing the findings. These
were further corroborated by quotes from the empirical data.
5 RESULTS

The primary purpose of this study was to explore and understand the current provision of Special Care Dentistry through the experiences of service providers in Brunei Darussalam. Participants’ accounts of their experiences provided insight into the research questions. This chapter described how the study was conducted in terms of recruitment and approach of participants, where and how the interviews were conducted and any challenges the researcher faced. This is followed by presentation and exploration of the themes arising from the data collected as described in the methods section. There were four main themes; (1) The workforce of SCD; (2) Concepts of disability; (3) The current provision of SCD and (3) facilitators and barriers of SCD.

5.1 THE CONDUCT OF DATA COLLECTION

Data collection was carried out in two phases in Brunei during the researcher’s term breaks following ethical approval and pilot interviews. The first phase of data collection was carried out between December 2018 – January 2019 (n=12 interviews) whilst the second phase was conducted between July – August 2019 (n=10 interviews).

5.1.1 PROCESS OF RECRUITMENT

The flow of recruitment of participants is illustrated in Figure 11.

5.1.1.1 Phase One

As part of initial inductive building of data, the researcher selected sixteen participants according to the criteria described in 4.2.2 involving service providers at primary care level, in all settings. This was carried out as they are typically the first point of contact for all patients. The demographic characteristics of this sample is presented in Table 9 and includes years of working experience, post, place of work and training.
The gatekeeper contacted these sixteen selected participants via email in October 2018. The email included an invitation to participate in the study (Appendix 11), participant information leaflet (Appendix 9) and a link to a google form (Appendix 10).

Only two participants agreed to participate before the deadline. The gatekeeper followed up the email with a phone call/or WhatsApp message. The majority of the participants informed the gatekeeper that they were not aware of the emails sent. Following this follow-up, five further service providers agreed to participate in the study. The researcher selected a second batch of participants to approach which corresponded to the demographics of the participants who had refused. Invites via email were sent out in November 2018. Again, a reminder phone call was made. Only two out of the thirteen selected agreed to participate.

The researcher was approached by four of the eligible participants on different occasions to enquire about the study. Enquiries ranged from their eligibility to participate due to their lack of work experience and/or lack of experience in Special Care Dentistry, the flexibility of the interview times and about the refreshments provided as an incentive were also raised. The researcher answered as fully as she could without trying to coerce or put pressure on participants. Three of the enquirers participated in the study while one declined.

In this phase, 20 out of the 29 eligible participants either refused (n=8) to participate or could not be contacted. Upon enquiry by the gatekeeper, four participants refused upon finding out that they would be interviewed by the researcher, two participants felt they did not have time, whilst two did not give a reason. Twelve participants could not be contacted.
Nine participants agreed to participate in the study, and all agreed to share contacts individually by phone or WhatsApp. Most of the participants indicated their preferred type of interview on the google form. These arrangements helped in the confirming and arrangement of interview times.

Six eligible participants were identified through snowball sampling (Onwuegbuzie and Leech, 2007). Despite emails being sent as early as eight weeks before the intended interviews were to commence, delayed responses and unsuitable time offers created time constraints, affecting the arrangements and timings of interviews. Hence, only three out of the six identified participants were recruited in this first phase. These participants were contacted via phone call by the gatekeeper to invite them to participate in the study. Once their agreement was obtained, the researcher contacted the participants to arrange interviews. The remaining three participants were brought forward for the second phase of data collection (Figure 11).
Figure 11 Flow of recruitment process - Phase 1 and Phase 2

Total participants = 22
On 9th January 2019, a continual professional development lecture on “Introduction to Special Care Dentistry” presented by Dr Nurul Sa`idah Ishak (the first trained specialist in SCD returning to service in Brunei) gave a brief introduction on what Special Care Dentistry was and referral requirements. As the lecture was postponed previously already, they were not able to postpone it further. The researcher was concerned that this might influence participants. Forty-one dentists attended the lecture. Only three out of the twelve participants interviewed in phase One attended the lecture and another three in phase Two.

5.1.1.2 Phase Two

Upon reviewing the characteristics of the participants from the first phase, the researcher identified some groups who were still unrepresented in the sample, for example non-government dentists, primary care managers and specialists. The researcher selected participants to rectify this in the second phase of interviews. Eight further participants were selected. The gatekeeper sent out the invitation email eight weeks before interviews were to be commenced and followed it up with a phone call to inform participants regarding the email. The response rate improved as participants replied two weeks before the deadline.

A further five participants were identified through snowball sampling but two of these participants were already invited and had agreed to participate in the study. The other three participants agreed to participate upon being contacted by the gatekeeper.

In this second phase, most of the participants consisted of senior clinicians - specialists or clinical managers. Only two participants utilised the google form, hence more effort was spent on organising interviews. Most of the participants had demanding clinical timetables, very little free time and were also unavailable or unwilling to be interviewed during lunch time or after work. As these participants
were crucial in the development and in “filling up the gaps” in the research data, the researcher negotiated a time and place that suited the participants. Two interviews were planned in the clinic in between patients. This resulted in numerous pauses within the interview as the participants had to attend to their patients and continued again once they finished. Four interviews were planned upon completion of the participant’s last patient of their clinical session. Four of these “after clinics” interviews had a near accurate estimation time, whereas one interview had to be rescheduled as the clinic ran over time. During interviews with an “estimated” interview time, the researcher spent up to an hour waiting until the participants were ready to start or resume their interviews. Only one interview was conducted during lunchtime. The remaining three interviews were conducted during the participant’s protected administration time.

Despite the small scale of this study, the logistics in recruiting participants, organising interviews - the time taken for phone confirmations, the “waiting”, the scheduling and re-scheduling of interviews, finding the most convenient time for both the researcher and the participant, the researcher reflected on how challenging real-life research could be.

5.2 RESEARCH SETTINGS

The interviews were conducted primarily in Brunei-Muara district. Most interviews were conducted in the National Dental Centre (NDC), located about 16km from the researcher’s home. Approval was sought from the Director of DDS to utilise the conference room to conduct this study. The room was subject to availability. On the two occasions where the room was unavailable, the researcher requested her colleagues within the department to utilise their office to conduct the interviews.

The second most popular venue for interviews was in the main hospital, Raja Isteri Pengiran Anak Saleha (RIPAS) hospital which is about six kilometres from NDC.
RIPAS hospital housed dental specialists and is the main referral hospital for dental treatment under general anaesthesia. Three of the participants working in peripheral health centres preferred their interviews to be conducted in-house. The researcher had to travel between ten to forty kilometres to conduct interviews in peripheral clinics/hospitals. Interviews in RIPAS hospital and peripheral clinics/hospitals were done either in the participant’s dental surgeries or in their offices.

Interviews scheduled after working hours (after 4.30pm) posed a difficulty in peripheral health clinics/centres as these buildings were secured and closed by the medical team by 5pm, limiting the time for the interviews. For providers who lived close to these clinics, it was illogical for them to travel up to 16km to NDC for the interview. Similarly, providers who agreed to carry out the interview while they were on leave were reluctant to go to NDC. In these four cases, an alternative venue in a form of a quiet food establishment near their home were suggested and agreed on both by both researcher and participant. These establishments were located at a range of ten to sixteen kilometres from the NDC. These establishments were checked for suitability by the researcher prior to the scheduled date and time. Figure 12 illustrates the researcher’s travels to conduct interviews plotted on the map of health facilities (Figure 5).
Figure 12 Map to illustrate the researcher's travels for data collection
5.3 **Conduct of the Interview**

All participants consented to being audio recorded with two devices. No data were lost during the study. Interviews lasted between 40 minutes to 90 minutes, with a mean of 70 minutes. In the first phase, due to the limited time period, the length of time between interviews was as short as two hours. Ideally, the researcher would have preferred at least four hours between two interviews as this would allow time for the researcher to write her field notes, rest and reflect on findings so far, and to go over the interviews. This was needed to allow the researcher to identify any emerging themes that required further exploration.

The researcher was meticulous in making field notes during the study to facilitate her exploration and as supplemental data to the study. Notes were also made at the end of each interview to record any thoughts, any assumptions the researcher might have had.

The words “special care dentistry” and “special needs dentistry” were used interchangeably by participants throughout the study, whether interviews were conducted in Malay or the English language. As mentioned previously in Section 3.4, the term special care dentistry (SCD) will be used by the researcher throughout in this thesis. However, participants’ preference for their preferred terminology will be denoted in reporting of quotes. This will also be adhered to when describing the patient groups described by participants. The umbrella term “patients with special care needs (PSCN)” will be used to group adult patients who were described as “special needs patients”, “special care patients”, “patients who require special care or needs” and patients with special care needs” in this thesis. However, during translations and analysis, the individual descriptions used by participants will be retained.

During the translations, there were some words that needed some discussion, for example the word “gauk” which was translated to ‘ill-mannered’, but it did not quite capture or convey the meaning. In the Irish equivalent, it would mean that the person
was ‘being bold’, ‘not conducting themselves’ or ‘naughty’ in the UK. Another word that required discussion was ‘amal jariah’ which in the context was that the provider gets ‘good deeds for the afterlife’ for choosing to work with someone with special needs. In Irish the expression might be someone getting their’ reward in heaven’. Another word that the team found difficult to translate was the word ‘kesian’. Direct translation to English would be ‘pitiful’. However, within the context of the present study, the word “kesian” denoted the need to care for a valued member of the community and that the person was worthy of our particular attention and empathy, rather than being someone who was pitied.

Fortunately, the medical conditions that were mentioned in the interviews were all in English. This created an ease in the translations as neither the research team involved in the primary translations were in the medical field.

5.4 Characteristics of the Participants

A total of 22 participants were recruited in the study (N=22). All the participants in this study were government employees working for the Ministry of Health. Most participants were women (73%; n=16); n= 17 were dentists of whom n=6 had specialist qualifications and n=4 had a managerial role, n=3 were dental nurses, n=2 were from the wider dental team. Figure 13 presents the summary characteristics of the sample.
5.4.1 PARTICIPANT CASE STUDIES

Some case studies were used to illustrate the diversity and experience of different sectors of the dental workforce recruited. These were developed to aid analysis and a full description is provided in the Appendix 17.

5.5 THEME 1: THE WORKFORCE OF SCD

The structure of the organisation and the dental workforce in Brunei described was unique. All patients, including children and adults accessed dental care through primary care services and provision of care was principally primary care-led. Primary Oral Care Dentists (POCD) and Primary Oral Care Nurses (POCN) acted as a front-liners in the management of patients who required dental care and referred them to the specialist services when needed. This included patients with complex treatment needs, patients who were dentally anxious or lacked understanding to tolerate dental treatment and
required GA to accept dental treatment. Additionally, referrals also included children with extensive or ‘rampant’ caries.

The dental workforce was made up of service providers of different skill-mixes and different backgrounds in terms of training and experience.

5.5.1 **PRIMARY ORAL CARE DENTISTS (POCD)**

The dentists working in the primary care services were made up of an amalgamation of graduates who were trained internationally (as described in Section 2.5). These POCD therefore received variable amounts of training for management of PSCN, reflecting the curriculum within their training undergraduate dental school. From the participants’ description, their training ranged from a short series of lectures to more comprehensive intense hands-on training in clinics or within community placements organised by their institution. The level of training had similarities between institutions internationally, for example education was predominantly through lectures for those who were trained in the UK and New Zealand particularly.

*Special care dentistry was introduced in 4th year so we had a few lectures on inhalation, intravenous, different types of patients needing special care dentistry.*  
*P7pg2line16*

*I feel like I didn’t really have enough training back in my undergraduate training.*  
*P9pg4line44*

*We had lectures, quite a few lectures [on SCD] but, we didn’t have any clinics on it.*  
*P10pg8line50*

There was also some variation within the same overseas undergraduate institution itself, for example in New Zealand, one dentist graduated with a more hands-on training than the others who reported only receiving lectures in special care.

*Back in my uni[versity] days, it’s just a series of few lectures about special care and how would you treat them and what kind of, what is deemed to be a special care patient.*  
*P7pg2line16*
We got one week of rotation for that traveling dentist called domiciliary care, it’s like a mobile clinic for a week, to places like Pusat Ehsan [special needs centre], those places, just for a week to basically just provide whatever they need- help the nurses with their care, ask the carer or nurses which, whether they are having problem about oral care or any complaints on their teeth and we also did some screening if I remember correctly also. Yeah just a week [in undergraduate]. P11pg6line9

Upon their return to Brunei, graduates were expected to translate the knowledge and skills that they acquired during their undergraduate training into the Brunei setting. This was enabled by an initial placement in the NDC, and after that graduates were sent out to work in peripheral clinics under the supervision of the senior clinician there.

Experiences in the characteristics of patients seen varied within each peripheral clinic according to respondents. For example, those who were placed in PAPRB Sungai Assam clinic which is in a rural area, with a population of people mostly from a lower socioeconomic background would present newly qualified staff with a different patient demographic compared to a more urban affluent clinic such as the Berakas Health centre. As the POCD were not rotated evenly to all peripheral clinics, this suggested that there were some limits in the types of patients that they were exposed to during their working experience.

Respondents reported that the senior clinician (a POCD) was assigned to play a role in their development to become an experienced dentist. Participants reported that being assigned to an experienced clinician who was willing to teach was based on luck rather than the design of mentoring programme. Some participants were positive about acquiring help and support from their seniors while a number expressed that they had to be more self-sufficient in their management of patients.

“It did help me, because I had a supervisor, but if I was alone in the clinic, I would have just referred to a, someone more suitable in terms of planning treatment.” P9pg5line4
"I think the good thing about being in Primary Oral Care, you get to see patients even though you think they should be seen by a specialist. Because we are the first liners. You get to see, you get to kind of choose if you can manage this patient because I think for me, it’s all about you try first, if you really cannot do it, if you really cannot manage then you pass it on especially [to] someone who is a bit more experienced. P7pg6line10

“Nothing has actually been put in place. The only thing that has been put in place is that we’ve had the Paediatric Department to fall on that they were the ones primarily seeing Paediatric patients plus these patients because it overlaps with Special Needs. So, we could call upon them for support, a little bit of support and like opinion. In terms of the full support, nothing’s really been put in place.” P8pg15line15

A mentorship programme was recently structured and formalised in 2019, yet the ad hoc nature of the previous mentoring scheme remained a strong theme.

None of the participants in the present study mentioned being supervised by a senior POCD whom they felt were particularly experienced or were more likely to see patients with special care needs. This reflects the lack of formal training and dental expertise in PSCN amongst the senior clinical workforce and the limited targeting of the service for PSCN.

Respondents reported that as front liners, they provided a range of treatment including management of pain, scaling and prophylaxis and restorative treatment. They reported they would usually attempt to do treatment for all patients according to their needs. However, there were some instances where some providers would just refer without attempting treatment because of the label given to the patient such as medically compromised or patients with intellectual disability – “I mean, if it was just [patients with] anxiety, I could try first, but if it was medically compromised, or intellectually impaired, then maybe I would just refer. P9pg19line17.

When referrals were warranted, patients were referred to specialist dental services for further management. Examples of patients referred were cited as being patients who were still uncooperative despite reasonable adjustments made, patients who had complex treatment needs necessitating management with or without GA and patients...
who are medically compromised requiring hospital-based management such as extractions of multiple teeth for a patient on warfarin. Adult patients were referred to oral surgeons, largely for management under general anaesthesia. In some instances, where oral prophylaxis or restorative treatments were required under behaviour support only, some POCD reported referring adult patients to specialist paedodontists for dental treatment.

This showed that the POCD in Brunei were made up of a workforce with limited and varied exposure in PSCN in their overseas undergraduate training. Upon their return to Brunei, the POCD had patchy exposure to a range of PSCN and only a few experienced the management of PSCN, because there was a very limited service catering for PSCN. There was no formal mentoring available until early 2019, and this new mentoring did not include dentists with SCD experience.

5.5.2 Basic Specialty Training (BST) Trainee

After approximately two years working in primary care, POCD entered a three-year BST programme where they were assigned to different specialties within dentistry such as orthodontics, endodontics, prosthodontics including implantology, paediatric dentistry, oral surgery, dental public health, periodontics. BST trainees who have completed training or were still training explained that they had more exposure in PSCN during their rotation in paediatric dentistry and oral surgery than in POC.

In the paediatric dentistry rotation, participants responded that they learned behavioural support techniques in managing children requiring SCD such as children with autism, children with syndromes such as down syndrome. This included voice control and desensitization.

*I was taught for patients who are not so compliant, like down syndrome, authoritative, male-figure, with a stern voice will get them to comply a bit more.*
[Desensitization explained]. The patient is gradually systematically desensitized over time, like they have the luxury of being able to visit a dentist and getting used to, having to see a dentist and gradually warming up to them and being able to open their mouths.

In their oral surgery training, participants described their exposure to a range of PSCN including medically compromised patients such as people who had recent stroke, in-patients including those detained in psychiatric units and those undergoing palliative care as well as patients with intellectual disability requiring GA for dental treatment.

The participants who had BST training felt that their training had provided them with exposure and more structured training in management of children and adults PSCN during their rotations in paediatric dentistry and oral surgery.

5.5.3 DENTAL SPECIALISTS

Prior to the return of one specialist in SCD at the end of this study (2018), there were no dental experts in SCD in Brunei. Hence, dental care for PSCN was carried out in an ad-hoc basis by the dental specialists, particularly in paediatric dentistry and in oral surgery.

Children who required SCD were managed by specialists in paedodontics and the paediatric nurses within the paediatric dental team. These clinicians were formally trained in SCD but their scope of practice was limited to those under 17 years old. Their expertise included behavioural management, dental care of children and adolescents who were medically compromised, those who had developmental conditions or syndromes as well as the provision of support for individuals and groups in oral health promotion and prevention. As there were no adult services to transition to, the paediatric team continued to provide care for patients once they reached adulthood and these PSCN were retained as adult patients in their service.

Ad-hoc services within the oral surgery specialty were also provided in Brunei secondary dental care. This were largely for management of patients under GA. Apart from
management of medically compromised patients and dental management under general anaesthesia, specialists in oral surgery did not have formal training in management of PSCN. Additionally, oral surgeons reported working beyond their usual scope of practice to fill the gaps in restorative provision for PSCN.

Ad-hoc arrangements within paediatric and oral surgery appear to have concealed the limited provision for PSCN within the dental services. These arrangements were accepted by dentists and specialists within the dental service structure as a norm despite the team providing care working beyond their usual scope of practice.

**Summary of Findings**

The service providers involved in the management of PSCN in Brunei were made up of an array of dental care professionals and administrators with a range of training, skills, and confidence in management of PSCN. Experiential skills and training acquired were informal and self-directed. Mentors in primary care setting and in specialist settings were mostly not formally trained in SCD. There were no formal care pathways for PSCN; the paediatric specialist unit established after trained specialists returned in 2006 provided treatment for PSCN children. However, there were still no established care pathway for PSCN adults who could not tolerate treatment in primary care or those who had complex needs. At present, prior to the return of the Specialist in SCD, these gaps in service were provided by specialist oral surgeons and paediatrics units who were working beyond their usual scope of practice.

5.6 **THEME 2: THE CONCEPTS OF DISABILITY**

In this study, the concept of disability viewed by participants was ascertained by their understanding of special care dentistry specifically in terms of the groups (and the characteristics) of groups requiring SCD. The researcher observed that the terms ‘special care dentistry’ and ‘special needs dentistry’ were used interchangeably by the participants and the terms appeared to be synonymous to them. Whether participants
were grasping for an official definition was unclear, but uncertainty existed in their understanding, even though some had reported that they had quite an extensive exposure in their undergraduate training.

Generally, participants viewed SCD in two broad ways;

1. In relation to people needing care i.e., as a group of people with certain characteristics requiring special care dentistry (PSCN). These characteristics included frailty in older people, physical disability restricting function and mobility, developmental conditions such as autism, people with intellectual disability, people who were medically compromised, people with mental illness, as well as people who were socially excluded. There also appeared to be a hierarchy within the PSCN, where participants felt that some groups were more valued or more worthy of care than others.

2. As the adjustments in care being given to particular patients. These included the adjustments made to facilitate care, the range of treatments undertaken and included behavioural support practices and utilisation of general anaesthesia and the clinician who provided this care. These is explored under Theme 3 – Current Provisions of SCD.

5.6.1 PEOPLE WITH SPECIAL CARE NEEDS (PSCN)

Participants described PSCN as comprising a wide range of groups. Dentistry for older frail people were emphasized in the inclusion of PSCN, followed by groups that were largely characterised by the presence of disability or impairment that of itself necessitated specialized care. Most often, the medical model approach was used to describe these groups. These included a broad range of patients with physical, mental, intellectual, developmental and sensory disabilities and patients who were medically compromised.
Special care dentistry is a special branch of dentistry whereby we look at patients with special needs, in terms of patients having intellectual disabilities, physical disabilities as well as also those considered as mental health and capabilities. Those are the kind of needs that needs to be termed under special care dentistry. That’s what I understand by that.

I think (SCD) normally includes those who are medically compromised, medical problem, congenital or not. Physical, any physical impairment, maybe visual (impairment), or hearing (impairment). Intellectual (disability) like Autism, or those whom are hyperactive. Maybe that’s it.

Some respondents used the terms ‘not normal’ when describing the groups that should be included in PSCN. They compared these patients with the rest of the patients that they managed. A single participant included socially excluded people as those in need of SCD.

5.6.1.1 Older people

Older, frail patients were one of the groups highlighted by most participants as a group that should be in PSCN. This may have reflected Brunei’s cultural norm of viewing the elderly as a valued member of society. Hence, participants believed that older people should have precedence over other patients. These group were also revered as “golden citizens”. The participants expressed respect and empathy for these group and recognized the need to provide special care for them. Their need for special care was primarily because of their decrease in function – both physical and cognitive resulting in frailty.

From my perspective, I would say Geriatric Care would come under SC.

What I can understand is special needs (dentistry) is for… whoever needs special care such as geriatric patients.
5.6.1.2 **Physical disability**

Some participants focused on physical disability when describing PSCN. These people included those encountering restrictions in function such as mobility issues were included as characteristics for PSCN;

*Special Care Dentistry is about treating patients with maybe some sort of disabilities so those who maybe have some physical disability, who can't really walk up the stairs… and then patients with, maybe patients with medical disabilities as well who probably are more bedbound. P6pg1line12*

And there was also a recognition that a medical condition could impede physical access to care;

*I think special care dentistry is providing dental treatment to patients… who are impaired as in like they require, like they are bed-bound or wheelchair-bound. so that also includes like…I remember there’s this one patient who was very obese and because of her obesity that made her bed bound. So, even though she is not physically impaired as such but because she can't move around, I would still categorise her as being a special care. P13p1line19*

This highlighted that impaired physical function impacting patient’s ability to access dental care or more accurately how difficult for these groups to physically access the dental surgeries were a factor in participants considering patients as a PSCN. Though this view of patient’s “inability to walk up the stairs” or “inability to move around” suggests there was still an element of exclusion for people with physical disabilities.

Some respondents mentioned how the patients with medical condition (physical function) affected their ability to tolerate care. Conditions such as Cerebral palsy, Parkinson’s disease, Multiple sclerosis, myasthenia gravis and stroke were included in PSCN.

*Patients with uncontrollable motor movement, who can’t control their movement when they’re awake. Those with Parkinson’s [disease], patients who had disabilities that [they] can’t really move [for example] with Multiple Sclerosis or with myasthenia gravis. P6pg11line3*

… stroke patient this one is bed bound… P11Pg3line11
5.6.1.3 Patients with Intellectual disability

Patients with intellectual disability were included within PSCN groups. The participants view of their disability relates to their ability to understand or tolerate treatment.

Special care dentistry is, specialty branch of dentistry that involves basically treating patients who can’t undergo the normal extraction like, maybe due to… [their] intellectual disabilities where they have to be, where extra precaution has to be given, or different methods needs to be P9pg2line24

I had a patient with intellectual disability - she needs a lot of patience and [it can be] tiring. But I understand they need more care and attention, so I don’t feel annoyed or anything, but I know that needs to be done so P11Pg7line21

They [PSCN] can be with disabilities; they can be with lower IQ, or maybe their understanding may be a little bit lesser than everyone else. P3pg1line17

5.6.1.4 Patients with mental disability

In Brunei, some participants referred to patients with mental disability as being the same as intellectual disability and they specifically believed that PSCN was mostly about intellectual disability.

I always think it [SCD] is about mentally disabled patients… as they lack cooperation P20pg12line44

SCD is like treating mentally disabled patients… because I really don’t know what to do. P10pg1line25

However, some participants equated mental disability with mental illness. Few highlighted that patients with mental disability were included in PSCN.

They are mentally handicapped… Mood disorders maybe, personality disorders, psychosis P5pg2line1

Patients who are mentally disabled, for example patients who are in the psychiatric unit P6pg2line12

In contrast, another participant did not think that they were included in PSCN.
To us, they [Patients under mental health unit] are like “normal” patients. To me I won’t categorise them as special care… They can be seen in OP [Primary oral care]. But they may find it difficult to wait to queue. So, maybe that’s why it’s easier for them to be seen [in tertiary care] at least you know they come in, they get seen, and then they are out, rather than having to wait a long time.  

P13pg14line21

5.6.1.5 Patients with sensory disabilities

Patients with sensory disabilities such as patients who were non-verbal, patients who had impaired hearing or impaired sight, patients with autism who might have an aversion to touch and those with a gag reflex were mentioned as included in PSCN.

Those who really cannot speak… patients who have a reduced hearing ability

P4pg5line10

I had [a patient who was] mute and deaf.  
P8 pg10line21

[Patients with] disabilities – like dumb/deaf, acquired or congenital blindness, autistic patients  
P3pg2line4

People with severe gag reflexes  
P12pg2line15

5.6.1.6 People with developmental disabilities/syndromes

Some participants described patients with developmental impairments and people with syndromes complicating provision of dental care should be included in PSCN.

[SCD] is about seeing patients who has some sort of developmental impairment…

P7pg2line10

The people that I would call special care dentistry are… people with complicated syndromes  
P8pg1line18

Patients with down syndrome…  
P5pg2line8

Patients with autism…  
P5pg13line7

5.6.1.7 Medically compromised patients

Most participants included patients who were medically compromised within the PSCN groups. Often referring to conditions that could be managed in a primary care setting but there were some who suggested the patient’s management needed specialist skills.
Medically compromised patients say if they are on Warfarin, if they are on Aspirin...

I’ve managed someone before on warfarin without needing to refer to a specialist. So I don’t think patients should be seen by a special care dentist because I think if we can manage it, then why bother referring

Usually for patients on warfarin, I would refer. I had one with bisphosphonates. I refer, I refer to OS [oral surgery]. She needed extractions.

Patients who are obese were also mentioned to be included within PSCN, mostly due to their mobility restrictions.

I think special care dentistry is providing dental treatment to patients… patient who was very obese and because of her obesity that made her bed bound. [Female dental specialist, over 15 years of working experience] special needs is, just people… maybe like obese. Like, really obese people.

There was a lot of emphasis on patients who were diagnosed with cancer – either currently undergoing treatment or on palliative care to keep them comfortable or patients with a history of cancer who required invasive dental treatments.

Medically compromised, such as like cancer patients needing clearance (removal of all their teeth prior to treatment), maybe patients who have history of cancer, just to, for more precaution given in terms of like preventing osteoradionecrosis, patient who had history of chemotherapy for lymphoma

I had a patient, she was about 26 or 27 years old, female, she was diagnosed at the time with stage 4 ovarian cancer. She was an inpatient and very sickly. We were called over to remove her braces.

Patients who were hospitalised such as for recent stroke, in a coma was also mentioned as PSCN.

Stroke patient this one is bed bound so he was transferred from the ward.

Patient who was in coma. I think because of her heart problem. And she was in Palliative care.
Interestingly, some participants deemed medically compromised patients to be excluded in PSCN. Participants believed that prior medical planning and liaison with hospital-based management was not within the scope of SCD. Instead, many believed these groups should be managed under oral surgery.

They [medically compromised patients] are not really special care. They are just medically difficult. It’s not really difficult, it’s like you just need to plan I guess. as I said, simple treatment should be done in primary setting but if the patient needed extractions or whatever. then you probably need to have it done in a hospital setting [in OS]. Again, it’s not really special care

Another participant described that because diabetes, hypertension and hypercholesterolemia are common among patients in Brunei, she feels that these patients are easily managed in Primary oral care settings (POCS).

Patients who are easy to manage [in POCS], diabetes is common, hypertension and high cholesterol, in Brunei, it’s quite common for patients to have all three [diagnosis] together

5.6.1.8 Patients who are ‘not normal’

People used non-inclusive language and labelling to describe PSCN. Several participants described the ‘not normal’ condition of people as those needing special care, but they related the lack of normality to medical physical and mental impairment.

[SCD] it’s about seeing… someone who is not normal - medically, physically, and also like in terms of psychologically.

SCD is like the condition of the person is not normal, for example children with autism - they are special needs. They are not normal than the other regular kids. There is a big difference between children who are normal than children who has special needs. The difference depends on their, like autism is different, and syndromes are different too.
5.6.1.9 Socially excluded and marginalised groups

Some participants included marginalised groups who did not have access to dental care due to their living conditions as PSCN. These groups included people who lived in secure, protected shelters, for example those under welfare, those who were detained under rehabilitation centres or inmates in prisons who required special access to dental care.

[SCD] includes [people in] rehabilitation and shelter units. Cause they need that special, special care even though they are not under specialist category. There are two. One is Shelter Unit, (those) with a problematic family history, where (their) parents are divorced, parents who abused their children and (those with) social issues. And then rehabilitation Unit where the children themselves have a problem like drug abuse for example… so I don't know whether they come under special care or not, but I think we need to properly care for them. P20pg1line44

There was some uncertainty expressed about including these groups in PSCN.

5.6.1.10 Summary: Imprecise language and lack of knowledge of different disabilities used by participants, lack of understanding of needs of particular groups and hierarchy within PSCN groups.

While a broad group were included as being PSCN, there was considerable confusion about groups to be included, and the complexities of need that would be appropriate for specialist intervention. There was extensive misunderstanding and misinformation about various disabilities. In some cases, non-inclusive language was used, for example as illustrated by a few participants who referred to patients as “not normal”.

Poor understanding of disability was a common finding. For example, patients with autism were described as having an intellectual disability, rather than a developmental disability.
Intellectual (disability) like Autism, or those who are hyperactive. Maybe that’s it.  

Mental illness, for some, was synonymous with intellectual disability.

Any mental (disability) like any learning disabilities.  

The understanding of disability was simplistic in some cases. Participants were not able to link the associated complexities and accompanying co-morbidities resulting from the disability. As an example, participants were not able to link dysphagia within patients with disability such as cerebral palsy. These patients were often just labelled as wheelchair users. Participants did not appear to understand the complexities involved in providing home care in a functionally dependent adult who was non-verbal. This was illustrated by participants recalling a case of oral myiasis in a patient with acquired brain injury with associated complexities in physical, intellectual and communication difficulties, and who had not been able to access timely dental care;

Recently Dr. X had showed us a case, wherein they removed a lot of the worms inside the mouth because that boy was bedridden and was taken care at home... So, they literally had to remove a lot of worms from inside the mouth! Maggots!  

The other day there was one with maggots… that they [the specialists] had to operate. The patient was an adult. His mouth was constantly open. They [his carers] didn’t know what entered his mouth, could be a fly. Maggots! Poor guy!  

They described this horrific finding of neglect but did not link it to be as a result multiple complexities or failure to interact with dental care at any level. Much of this might be explained by the fact that participants have very limited encounters with these patients or their carers.
Hierarchy of PSCN

It was clear from these participants that there seemed to be a wide spectrum of PSCN in Brunei. A review of the data suggested a hierarchy exists within the groups and that patients were ranked in relation to their regular patients based in POC as seen in Figure 14. Older patients or the golden citizens were valued more than the regular patients and so were placed first on the list.

Gold citizens get prioritized. This is a must. You cannot expect an elderly person to wait for their turn for a long time. P4p11line3

Patients with physical disability and patients who were medically compromised were deemed on a par with the regular patients that providers encountered as participants described being at ease in managing these groups. In contrast, patients with intellectual disability who were deemed uncooperative and rarely mentioned by the participants, appeared to be the least prioritized group. When they were mentioned, little effort appeared to be put in managing this group. The approach to these patients in primary care contrasted greatly to the care provided by the paediatric dental nurses who targeted and prioritised this group, so long as they were registered to the special care centres or special educations unit.

Those patients that we do, completed cases and there is [no] continuation [of care]. [they are] just left like that. P17pg16line9

In POCS, these patients were sometimes intentionally avoided by participants or were referred on very quickly to oral surgery.
Figure 14 Spectrum of patients with special care needs (PSCN) (From most valued/prioritized to least valued or neglected)

5.7 THEME 3: THE CURRENT PROVISIONS OF SCD

Having identified the PSCN groups in the previous section, participants emphasized how SCD was about how dentistry was being provided for these patients – what adjustments were made to make dentistry possible, the types of treatments, and who the provider was. Some participants believe that provisions of dental care for PSCN should be equal or the same as the rest of the population.

_Special care dentistry (is) equal care to a special group of people. Basically, dentistry provided where you follow their [the PSCN’s] timing because sometimes they cannot wake up early. Some of them cannot, you know they got issues at certain times of the day so you got to change your appointment, according to what they want but of course within working hours. We try to accommodate them as much as possible._

_P18pg1line13_
To me, special care dentistry is just the management wise, it’s just the same as what we provide - the services we provide is the same to any other population, the normal population. **P11pg1line22**

These participants recognised that “equal” care for these groups required reasonable adjustments or that adjustments were needed to provide equitable care. A few participants however did not share these views of the provision of equitable care, as they felt that they were not able to provide this care for these special groups where they would avoid and evade seeing this group (as described later in Section 5.7.3.1) and hence, depriving them of “equal” care.

5.7.1 **Reasonable adjustments provided for PSCN**

Reasonable adjustments to facilitate care within the concepts of access included arrangements preceding dental care, patient-centred accommodations such as taking more time, adapting communication, the need for a more comprehensive care and referral to specialists as required.

5.7.1.1 **Arrangements for patients with physical disabilities**

With reference to patients with physical disabilities being seen in physically inaccessible clinics, providers implied that the patient’s condition were the cause of the barrier of access rather than a failure to make a reasonable adjustment in the POCS environment.

*Special Care Dentistry is about treating patients with maybe some sort of disabilities so those who maybe have some physical disability, who can’t really walk up the stairs. Basically where I’m working now, patients have to walk up the stairs so patients who can’t walk up the stairs can’t be seen by us unless one of the rooms on the ground floor is empty.** **P6pg1line12**

A participant acknowledged how a physically inaccessible dental clinic may have appeared to be a cause of patients not attending that particular clinic.

*Actually, I’ve seen quite a number of patients on the wheelchair. In this clinic, [with no physical accessible], of course quite rare. But in other clinics, there’s no difficulty in patients [on wheelchairs] trying to get into the dental clinic. There is always ramps or a*
clinic downstairs that can help us to see the patient. Most clinics are mostly accessible to these wheelchair patients. I think it should be okay. But otherwise, in terms of moving these patients from the wheelchair to the dental chair, is mostly by manual manipulation. P6pg22line12

However, many participants reported that if patients do attend in an inaccessible clinic, they would arrange to see these patients on a lower ground floor or to arrange referral to a different, more accessible POCS clinic. They described moving patients to the dental chair manually or if this was impossible, to examine and provide treatment whilst the patient was in the chair.

[Upon encountering patients who has difficulty accessing the dental clinic] we have to check the dentist available on that day and then we need to check which room is available downstairs. Sometimes we have to use the surgery [used for periodontology patients]… [These patients can] be seen downstairs but then the problem is when they need x-ray [on first floor], again we don’t have lifts here. Sometimes we ask the patient to go to X Clinic because there’s a lift there so the patient has to go all the way there again and come back here with the x-ray. P1pg9line29

Well, if you can move them into the chair, we try. If you can’t then we just have to try examining them in the wheelchair itself. P5pg6line20

While these reasonable adjustments may work with people with physical disability only, participants did not display any awareness of the impact of the patient’s conditions and other comorbidities such as dysphagia could have on dental care (as discussed earlier in section 5.6.1). This view of the extent of management being limited to within the dental surgery suggested that their depth of knowledge regarding the management of these patients was superficial. It also suggested that their experience in encountering more complex patients was limited.

5.7.1.2 Medical collaboration prior to dental care

Another reasonable adjustment mentioned was collaboration with medical colleagues regarding medical management of patients preceding their receiving dental treatment. This was considered as SCD.
Special Care Dentistry is about treating patients… (who) needs a lot of different medical care before we can actually treat them. P6pg1line21

These adjustments were mostly for the medically compromised groups of PSCN discussed in Section 5.6.1.

5.7.1.3 Extra care - time

Other accommodations provided termed ‘extra care’ were patient-centred accommodations that included spending extra time with the patient;

Special Care are the people that need more time and understanding to deal with their conditions… they require us to speak to them at a level where for example, like they were a child. Or even those who are a little bit milder than that… they just need a little more time to communicate, to get your point across, or to get them to understand what you’d like, what the procedures are to be done, to get their consent and what not… And it’s just taking a little bit more time than your average patient where they have no problems in understanding what you’re saying, and communication is efficient… with these patients, you need more time and these are the patients where I would classify as special care because they just need more time than the average time that we set for each patient in a walk-in clinic. P8pg1line19

Participants believed the extra time given could allow the patients to adjust in receiving dental care, to allow better communication and also allow better understanding.

However, time allocation during POCS could be restricted. This time limitation stemmed from the high number of patients seen. This limitation resulted in providers having to compromise treatment, for example limiting treatment options. Time constraints were cited by providers as limiting their ability to address the complaints on the day only and restricted an exploration of holistic care.

So normally if patients, if there are a lot of patients then I will normally do what patients complain of- and, I probably will miss out some things that I needed to address first, for example, for example in this case, visually impaired patient, I would- I would probably address what he complains [of] and what he wants that day and address in a holistic approach, like- yeah to like how he takes care of his teeth at home and all this. P11pg10line7
When you see OP patients, we are not spending much time with them, it’s like if our own appointment at least we have enough time, so our mind is also thinking about the next patient because we cannot spend a long time with her. So that is also in my mind. Because have to consider the other waiting patients also. Because as a government service, it’s not like the appointment system whatever we are deciding. Because some days have less patients, so we have enough time to spend with patients. Some days it’s very crowded so we have to consider the next patients also, if you spend more time with them, then the other. We have taken up the time of the other patients also. So have to consider that. So because of that, we have to sometimes limiting the treatment options.

5.7.1.4 Extra care – communication

Another ‘extra-care’ adjustment mentioned were about simplifying the provider’s communication and adapting the information given to the person’s level, for example in a language they could understand more, enabling the patient groups to accept and consent to dental care were part of the adjustments given to facilitate care; for those people, we need to give special care in giving treatment, anything. Even for explaining treatment options, treatment plans, everything, [we] have to take more care than the normal one.

It would depend on the race of the patient, and what language they would understand better. We have Chinese patients who speak English more than they speak Malay, they will be communicated to in English and so that would be the language that I’d speak to them in. If it’s a Malay child or a Malay patient, I would speak Malay. But in terms of words, it’d usually be smaller or simpler words. Sometimes it would be to describe things or to show things so it’s almost like treating them like children in a way. These are the ones that I’m saying you can still sort of communicate with them. You have some that you just have to communicate by body and sign language, and they sort of understand that.

This adjustment was particularly important with patients with sensory disabilities, where other forms of communication like sign language might be needed. However, time was also a factor in enabling this extra-care.

I had [a patient] who was mute and deaf. That one, had a friend who came with them but couldn’t communicate with them. I assumed she could communicate with him but in the
end I realized she couldn’t because I ask her- can you tell him umm, then that’s when I realized… In Brunei, it’s not necessarily that a deaf patient might learn sign language. So with this patient, I realized they didn’t have that. I also realized she was communicating with him also via body and simple body language and sign language. She wasn’t communicating efficiently so I just had to take over. But you know, just at that time trying to figure out the best way to communicate with them, it does take that extra time than usual. P8pg2line18 Those who really cannot speak, so communication is a challenge… patients who has reduced hearing ability, so we have to speak loudly. but when I do other patients think I’m angry. I had patients come up to me and say, there’s no need to shout but I told them this patient cannot hear so I have to shout to be heard. P4pg5line19 5.7.1.5 Extra-care – behaviour management Participants described these ‘extra-care’ adjustments as a different method or approach in the provision of dental care to achieve the same treatment, for example tooth extraction.

That involves basically treating patients who can’t undergo the normal extraction where extra precaution has to be given, or different methods needs to be given. P9pg2line24 This included use of some behaviour management skills, for example voice control, tell-show-do; or “suppressing” [Clinical holding] patients, was needed to be carried out to complete the intended dental care.

It’s all about behaviour shaping, making sure they are comfortable with you and then you tell them what you are doing, you start maybe small, it’s just probably just teaching them how to brush and then you slowly progress to something a bit more… and then what I remember is to tell, show and do. Like you tell them what you are doing, using a model, pictures and then show them and then only then you get to do, whatever you need to do inside their mouth and their teeth. P7pg3line3 A bit of voice control. Voice control. Well, I was taught for patients who are not so compliant, like down syndrome, authoritative, male-figure, with a stern voice will get them to comply a bit more P5pg5line17
[The patient was] suppressed. You know that move they [carers/providers] do with their leg, to block their [patient's] legs and arms locked their arms. So basically, held them down. I didn’t feel great [about that]. P5pg3line8

The participant who mentioned “suppressing” or clinical holding expressed how uncomfortable he was in observing this being applied, suggesting the need for training in clinical holding, least restrictive methods and careful consideration of the deployment of clinical holding. In contrast with this, a participant was comfortable with the need to hold her patient as she understood this was required to achieve the care for her patient.

He was a bit apprehensive when we did the treatment, basically you can’t communicate with him. So we had to do the extraction then on. So the mom and the caretaker actually help in holding him and we extract the tooth. But there was no way that I could communicate with him about the extraction, whether he’s in pain or not so that was just based on assumption and clinical exam only. P6pg3line16

5.7.1.6 Appointment-based consultations/scheduling

Providing an appointment-based consultation in tertiary setting rather than walk-in outpatient services in primary dental care and maximising their availability when scheduling appointments was also mentioned as an adjustment.

It wasn’t easy doing that [continuity of care], I had to give him appointments for that and I just wanted someone to follow up on him, just for the regular check-up to prevent… it’s more on the prevention side than anything else. P8pg5line22

This also includes adjusting to a time that is suitable for their carers as well.

Because I am dealing with mostly elder patients, many of them are more than 70 or 80 years old. Some people they cannot walk alone, they need someone’s help. When given appointments also, they are depending on their sons or daughters. P2pg11line18

5.7.2 Type of care given in SCD

Some participants considered SCD as the provision of a more specialized, comprehensive treatment required as an attribute to the patient’s condition. These
included a more different approach to care in that the patients should have a holistic care.

The treatment is more specialized, much more different… The management is different than with children who are normal. We, like, as paediatric nurses were given courses in learning how to manage, what is related to the treatment that we do especially for those who has heart problems, their treatment are not as what we normally do. It’s more towards us having to be more cautious. P15pg1line17

Special care (is) like we give special treatment for these patients, a comprehensive treatment. So from preventive to conservative and completion and then after that we continue with preventive and also follow ups. P17pg1line21

It appears that only the dental specialists and paediatric nurses were concerned about holistic care, including enquiring about oral hygiene practices done at home. As mentioned under “Extra-care – Time” section above, time constraints from high demands in primary care services was a factor in this omission among primary care providers. Furthermore, participants shared that pain was the most common complaint among PSCN attenders. This, together with time constraints made providers more focused on treatment, particularly relief of pain rather than prevention.

This patient was already in pain and if they were referred again, poor guy! If he needed a filling but he was not in pain, then its ok to refer him to the specialist. But if he is already in pain and then he was referred, that’s really unfortunate for the guy. Most of these patients [PSCN] they attend when there is pain P4pg11line12

A lot of them [PSCN] mainly come in for just pain. So, you’re dealing with the pain, you’re dealing with it, you’re dealing with the situation where they’re not… They’re genuinely slightly more difficult to deal with already and then you put pain on top of it and cooperation goes out of the window half the time. So… and yeah, that is quite difficult. I don’t mind dealing with them in Primary Care. If we had more time, then I would be comfortable with dealing with them in Primary Care. P8pg10line31

5.7.3 CLINICAL PROVIDERS OF SCD

A review of the data showed that there were three large groups of providers who were involved in the provision of SCD. The first group was those who do not want to manage
PSCN. The second group were those clinicians who encountered and provide dental care for PSCN making adjustments to accommodate the patients. The third group was the specialist group – these were clinicians the other groups referred PSCN with complex needs to for management.

5.7.3.1 Those who would avoid PSCN - The Avoiders

The first group of clinicians were those who avoided encountering PSCN, and upon encountering, would deflect and refer these patients to a different clinician. These clinicians explicitly refer PSCN onwards to another clinician, for example people who cannot tolerate dental treatment or those who medically compromised to providers other than themselves.

[Patients who are] medically compromised, or intellectually impaired… [I would] just refer

you try to avoid, like, I try to. No, I don’t want to do it, right? so I guess, yeah that’s why
I said, ‘come again, morning [as outpatient]’ so you don’t give appointments in the afterno... I guess it’s because, it’s a complex case, and then maybe, I don’t feel, um... comfortable? I think they should be referred, to someone else. I guess to the dentist who could, do a follow up or maybe like a continuation of treatment - on that patient? I guess? Cause if It’s us (POC), we’ll just relieve the pain and then just ask them to come back, there’s no proper follow up

I believe not all dentist would be as patient and passionate about treating this kind of patients. Yeah. They might just think it’s difficult and uh, maybe not so prepared to treat these patients so try and pass it on to other people. They think they cannot handle. I think- I think if they don’t think they can handle it, I think it’s okay and fair for a dentist to refer to someone else. If you’re not confident- if they’re not happy doing it, I think that’s okay to be referred on. Yeah. I mean, it is quite draining and it does need a lot of patience. Not everyone has that kind of um, attitude. Patience for that.

5.7.3.2 The clinicians ‘who make it work’ – The Problem Solvers

The second group of providers were those who encountered PSCN and applied reasonable adjustments and extra care discussed in the previous sections, adapting
patient-centred care to enable patients to accept dental care. Within this group there were two types of these SCD providers. The first one within these group were clinicians who believed that they have the capability of providing care for these patients themselves.

The thing about like Special Care Dentistry, you don't know until you actually get to see one. Honestly, I don't know about Brunei but at most I've seen sick patients. I know some people could have seen more patients who are a ‘true’ special care patient. I'm not even sure who they are... because even sometimes with autistic for example, there are some autistic patients who are on higher spectrum. They are quite normal you know so you can manage them yourself as a GDP rather than refer them to a special care specialist. P7pg13line22

I have seen a number of times patients who were physically and also mentally challenged as well. They come to us [in POCS] but we don’t refer to the specialist because we think that we can manage them. It’s not that difficult. It’s not that difficult a case. P20pg13line1

This group’s belief in their capability reflected their lack of awareness and knowledge of the complexities that surround PSCN. In contrast, the second type within these group were those who recognised that patients within PSCN have complexities that are beyond their skills and ability, and hence acknowledge the need for specialist referral, for example to oral surgery, paediatrics and some also mentioned the need for specialist in SCD.

If it’s for general let’s say basic cleaning, fillings if… depending on their cooperation level and even extractions I’ve done those as well, I’d be willing to give it a shot. If I’m unable to do it, I’d refer. Yea so I’d say I’d always give it a shot first. If it’s out of my reach, out of the realms of my experience then I’d pass it on to someone who might deal with them better. P8pg6line17

It’s kind of like, if I saw the cases more regularly, I might be more comfortable whether it’s my forte or not because sometimes it’s just an innate… you know you have a flair for it. I think I can cope in general; I’ve had enough, I’ve had some experiences with it, saw a range of those patients, I’ve been one of those lucky people. But if you said in terms of like, are you really comfortable to deal with them, depends on the severity of their disability. If they’re very… if it’s quite severe, quite complicated, I wouldn’t be that
confident to take them on unless it’s just for a general check. To do anything more invasive, or anything, to do treatment planning as well, even though it might follow the general rules, there are certain things especially they’re medical complicated, I would like to refer that on. P8pg6line14

I think we as Primary Care Dental Officers should be okay to decide whether or not the patient is suitable to undergo treatment in Primary Oral Healthcare. But if they are not, then it would be nice for someone to refer to, for further management. I think sometimes we know, you know, that we may not be able to provide the best available care for said patients in the healthcare setting. P5pg8line7

5.7.3.3 The Specialists

The third group of clinicians in SCD were the specialists and the dental nurses in paediatric dental team. These were the providers who recognised the complex needs of PSCN and provided care for these groups. These clinicians were more knowledgeable and experienced in providing care.

SCD is a branch of Dentistry which aims to make Dentistry more accessible to those with special needs. To give them a more comfortable experience because they are specialist who are trained in special needs, they know you know, better in managing treatment, if there are any complications as they are better equipped to deal with those. More experienced, basically. P5pg1line20

When you realised there are so many children with special needs, and we know they will become adults, somebody has to look after them as adults as well. So there’s a big role for special care specialist to [provide treatment for], even like the geriatric patients you know there’s also lots of them who need to be looked after. P21pg6line15

5.7.4 SUMMARY - EQUITABLE DENTISTRY FOR PSCN

Participants discussed how SCD was about how dentistry was being provided for PSCN – adjustments made to facilitate the provision of dental care, the types of dental treatment provided and who carried out the treatment was what made the dentistry SCD. Participants reflected that SCD was to achieve ‘equal’ care for PSCN. Furthermore, the general organisation view of everyone going to POCS first and many of the participants
acknowledging that PSCN were able to access dental care through this pathway were another way to achieve equal dental care to these groups.

However, it was noted that the ‘equal’ care was not equivalent to equity as the care discussed within the study was largely concerning how care was to be provided in the dental surgery. Moreover, an in-depth enquiry among providers revealed that appropriate care for these group were not achieved during these encounters in POCS. Interviews revealed that some providers intentionally avoided these groups or referred them on to a different clinician after the first encounter. Although the majority of clinicians who had seen these groups were able to provide care through reasonable adjustments, they revealed that time constraints during POCS compromised their care, which included limiting treatment options, managing the main complaint and failure to plan for holistic care. Avoidance, fear, deferring, and the compromised care offered for PSCN was far from equitable care. These findings reflected the lack of awareness and knowledge among participants, and the need for training to achieve the concepts of equitable services for PSCN.

5.8 THEME 4: FACILITATORS AND BARRIERS OF PSCN

A review of the data illustrated facilitators and barriers were present within four key areas, which will be explained further under the following sections as seen in Figure 15;

1. Structure and organisation; The availability and proximity of primary dental care services; the establishment of specialised services; the lack of policies surrounding PSCN and the recent collaboration with the medical counterparts
2. Cultural context; the role of Islam, role of family and upbringing and professionalism influences care and the presence of a hierarchy of PSCN
3. The Workforce; the workforce capacity with limited skill set and lack of specialist expertise; the lack of succession planning and the provider’s attitudes.
4. Unmet dental needs – the unknown levels of unmet needs in hidden groups
5.8.1 STRUCTURE AND ORGANISATION

Within the study, participants identified facilitators and barriers within the structure of the dental services and how the services were organised.

5.8.1.1 Primary care-led dental services

The process, the physical access (proximity) and environment, and the policies around POCS contributed in both the facilitators and barriers in care for PSCN. The current process of PSCN being seen initially in primary care was a facilitator in providing services for PSCN, as all citizens of Brunei have access to local primary dental care services. Patients in outpatients are seen on a ‘first come, first served’ basis and ‘all treatment provided’ is the state approach (Department of Dental Services, 2011).

Outpatients [clinic] in the morning, outpatient means like walk-in, someone who emergency cases, pretty much all basic dentistry is considered as outpatients, not just emergency and trauma cases. A simple check-up, extraction, fillings, scaling… and appointment patients are [can be] pretty much for long treatment like root canal, dentures, Pros-stuff [prosthetics, crowns etc.]. P7pg1line14

Informants believed the PSCN had the ability to access care the same way as the general population – in that it was available within the community, in close proximity to their home and could be accessed daily on working days, enabling patients or their carers to access services when it suited them.

“They [PSCN] can always come in, just attend. We’re not stopping them. It’s a matter of them wanting to come, or not. Cos we are always there (in the clinic) P10Pg11line5.

Patients prefer to attend to a clinic closer to their home P22pg7line22

However, participants expressed that the ‘first come, first served’ and ‘all treatment provided’ approach in the primary care set-up (outpatient) posed a barrier for PSCN. The high volume of patients accessing primary care daily created long waiting time
periods for patients to be seen, and this could be a deterrent for patients with special care needs to attend, especially those who could not wait for a long time. Furthermore, the possibility of patients being turned away if maximum number of patients had already turned up also posed as a barrier.

At the moment, we are seeing 50, about 40 to 50 patients for morning for 5 dentists, just in the morning so that, there’s pressure, time pressure. P9pg22line51

I would be comfortable with dealing with them in Primary Care. It's just that we've always got that ticking clock where we've got other people to see... the system is not set up to make it easy for us. P8pg10line35

Because if there are a lot of patients, we would say, 'we are closed' and ask patients to come back another day. P10Pg11line5

In addition to long waiting times and the possibility of being turned away, the time available for consultation and treatment during outpatient services was limited when there was a high volume of patients. This posed difficulty in carrying out time accommodations for patients who might require it as discussed in Section 5.7.1. Often this limited and restricted treatment options and prevented holistic care for patients. Most participants preferred to give out afternoon appointments to rectify this barrier.

Normally if patients, if there are a lot of patients then I will normally do what patients complain of- and I probably will miss out some things that I needed to address first, for example, for example in this case visually impaired patient, I would probably address what he complained and what he wants that day and rather than address in a holistic approach, like how he took care of his teeth at home and all.” P11pg10line4

Although appointments seemed to be a way to overcome this barrier, most service providers had already full appointment slots. Participants acknowledged their inability to meet the needs of PSCN who required to be seen more urgently and in close recalls through appointments. As a result, most participants had advised the
patients to attend in the outpatient clinics as a walk-in patient and accept the time limitations posed.

My appointment slots were taken up by other patients that I have to see as well so I didn’t… I couldn’t guarantee that I could do follow-up for him, regularly, which he probably requires just a regular routine, cleaning and check just to get him into the system every three to six months. P8pg4line20

In addition to the process of being seen in POCS, the environment in which services were provided was also identified as both a facilitator and a barrier to accessing dental services. New purpose-built POC clinics were equipped with spacious waiting rooms which were separated from other medical departments and were physically accessible despite being in the first floor.

Our clinics are quite new. It’s more open, it’s separated from the rest of the departments and quite big. So, there’s lots of space to just walk around and to sit down because it’s on a different level. Because I think when there are a few departments there, it gets crowded. P8pg8line36

Clinics that had been around longer had no lifts or ramps that provide accessibility to patients with physical disabilities. This created a barrier in that arrangements were required to be carried out before the patient could be seen.

If the clinic is not accessible to the patient because its upstairs, we are not able to see him, you can refer them to another dentist, to a clinic which is, more accessible to the patient. I guess you could liaise with the, with the dentist there. P9pg16line40

Basically, where I’m working now, patients have to walk up the stairs so patients who can’t walk up the stairs can’t be seen by us unless one of the rooms on the ground floor is empty which I’ve seen one (patient) in the last month. P6pg2line35

This acceptance among service providers for the need to arrange access to dental care at a different clinic or the ‘extra’ arrangement for patients to be seen in a wheelchair accessible clinic seemed to be the ‘norm’. These reasonable adjustments to enable provision of care for wheelchair users showed that the
information of “wheelchair accessible clinics” were not properly publicised and that the providers were used to improvising to meet the dental needs of this group of PSCN. Despite the goodwill of providers, wheelchair accessible dental surgeries in PCOS should be a requirement of the service as they serve as a first point of contact for any patients seeking specialised care as described below.

Some of the clinics are not accessible. Like see if a patient is physically disabled, say in X clinic, how are you going to bring the patient up [to first floor]. That itself is a basic thing, isn’t it? Patient comes in a wheelchair, it’s difficult in certain places, the patient getting into the clinic. Even if I have to refer that patient to the specialty care, they have to be seen in the primary health first. If they had to be seen [in primary care], how is the patient is going to get into the service? P3pg16line16

Additionally, the POC clinics were not well-equipped with facilities that could ease the provision of care, for example hoists to transfer patients into the dental chair or a dental chair tilter. This lack of equipment posed a barrier in carrying out dental treatment.

Brunei doesn’t have things that can help the dentist do dental treatments for special needs patients, for example like patients who are like difficult to transfer these patients to the chair, sometimes you have to go to the ward to treat them. And then patients who have uncontrollable motor movements. We don’t have that kind of equipment to help them to keep still. So, it’s a bit difficult. For patients who we can’t even transfer to the chair, I mean if they’re small, it’s ok. If they’re big size - how? I think all these things. P6pg21line12

A participant expressed her concerns that a referral to a secondary or specialist setting should be available to ameliorate the barriers encountered in POCS.

It would be nice for someone to refer to, for further management… We may not be able to provide the best available care for said patients in this healthcare setting. P5pg8line7
5.8.1.2 Specialist clinics

Specialist services in Brunei such as oral surgery, and later the development of paediatric dentistry, were seen as the facilitators for provision of dental services for PSCN.

From 2000, until Specialist paediatrics came back in 2006, we [oral surgery] were handling all those children. All the special needs would come to us. Quite a bit. Most of the special needs in this country are children. And adults only when they are in pain or something like that. We used to handle all the surgical work plus the paediatric children which needed GA. Any child needs GA, they will send it to us, we were handling everything. There’s no paediatric dental specialist then. So that’s where we found a lot of special needs children and autistic and all these hyperactive children and all the syndrome… Once we stopped handling children below sixteen, then the number of special needs we were managing came down. Adults as when they are referred then we will manage them. P2pg1line15

With the establishment of paediatric dentistry, care of PSCN children were more structured.

Special needs patients were taken care of by the Paediatric Unit. So they have been trying to get these patients in and be treated. in terms of you know putting fillings or doing hygiene dental work on them. So that has been established in Brunei I think. They were being continually seen by these nurses and also by the Pediatric Unit. P6pg25line2

Further introduction of special care programmes, where they seek to identify and target PSCN in special care centres and schools. The programme provided PSCN with information, increased awareness on the importance of dental care as well as how to access dental care. This early introduction to dental care enabled children with special care to accept dental care and facilitate their transition to adult care with POCS.

We tried to find initiatives instead. So, we suggested instead of the patients coming to us, like those special needs patients who will only come when they have pain. But we are still thinking like instead of them coming to us, we will go to them. Brunei has
centres at that time such as Pusat Ehsan, KACA, Pusat Bahagia. We told him we can go to these places. Rather than us waiting, it’s better that we go to the centres. In those centres, they have the registration details right. P15pg2line9

The special care programme – it doesn’t matter whether its children or adults – for as long as they were in the special needs centres, we will include them. P19pg1line16

they usually come with their parents – so we give a talk first to inform them why we held this programme – which is to provide ease for parents to bring their kids to the dental clinic, without waiting. We also provide screening as the parents are there so we can discuss about treatment plans and then provide toothbrushing demonstration on their child P19pg2line41

Specialist clinics in hospital settings, either oral surgery or paediatric dentistry in hospitals, were active providers of dental care to PSCN. In some cases, the specialist clinics acted similar to a primary care setting, where they accepted walk-in patients or patients that were self-referrals. This set-up was an enabler for care for PSCN.

They know there’s always a dental clinic here [in oral surgery] that they can access. I don’t think there’s any real problem. Because I know outside there is no access for them. There’s always a barrier for them [in POCS]. If there’s no other place that they can go, where the parents can bring their children, then just bring them here… At least we can see them, if we can treat them, we treat them. If we can ask them to go out after that, if we think that is possible, then we will [send out to POCS]. I would still accept them here even though there’s no referral at that time. P22pg4line34

Patients we see here [in paediatric dental unit], patients with medically complex problems, patient with special needs, we will continue to see here… they can just come in. P17pg1line11

In addition to their acceptance of walk-in patients, other factors that made specialist services a facilitator to care were their appointment-based system and so they had more time to see these patients, the clinics were physically accessible (the hospital was accessible to wheelchair users and had wheelchair accessible facilities) and care was provided by specialists.
Specialist clinic, they [PSCN] see us as a different… as a specialist. So they see
that if they go to the doctors, they would know. Either that or they still get referred to
the specialist clinic if they go to OP [outpatient]. So they see us as a specialist, then
they may as well be taken care of by specialist. P22pg3line43

Our time here in RIPAS is not so bad as the time if you are in OP [outpatients]
especially you know outpatient services, busy. So we make time when we took them
[PSCN] in. P18pg10line21

They [PSCN] went to RIPAS, they go RIPAS for their dental treatment. They have
better facilities, the doctors there are specialists. P1pg11line18

Participants acknowledged that PSCN seen in tertiary services has limitations to
their care. In oral surgery, preventive care was not carried out prior to treatment
under general anaesthetic and so PSCN and their parents disregard its importance.
Also, they were not able to offer continual maintenance dental care including
prevention and regular reviews to PSCN. With regards to treatment, Oral surgeons
have limited skills when it comes to providing endodontic or prosthodontic treatment.

I always believe in preventive care. Prevention is always in my head, in terms of
these patients because I know afterwards, after we care for the patients in the clinic,
we remove all the pain, we do all the restorative measures, at the end of the day,
it’s the follow up, in terms of preventive measures is the one that’s lacking. Some
of my patients, I ask them to come back and see me in six months, but I know they
wish that it’s somewhere close to their home. P22pg7line26

Usually after GA, then we teach them all that (brushing, prevention], whereas I don’t
know, I think get them from earlier first and then that. At least they get all the basics.
Before GA, at least you know that the carers know how to look after oral health or
the patient knows how to brush themselves. That they actually know how to do it.
Not just after GA cos they might not, they may never come again, whether they will
continually come in after the treatment. So, they might not feel it’s important to come
like every six months or to actually get their OH. P13pg9line32

[teeth with deep cavities are for] extractions only. Because if in GA, if we [oral
surgeons] do root canal treatment, under GA, like I can’t do like single visit. I’m not...
I haven’t been in tune for RCT for so long. I’m not confident doing a single visit
RCT… with regards to dentures] even if we have the facility, I don’t think I’ll be like confident enough to give them dentures. **P13pg11line12**

In contrast, the paediatric dentistry unit recognised in this approach a potential for neglect and loss to follow-up and as a result, they retained some of the patients requiring special care. This ownership in extending dental care to adults closes the disparity in some of the patients within these groups and acted as a facilitator to access care.

*Sometimes [I see] up to 33 years old, some but not that many. Mostly our priority. our target [patients] is below 17 [years old] because that’s paediatric. But because these patients who are above seventeen are neglected so we help out, help out when we see them. So our [paediatric] nurses see the patients until even they are 33, but then they [nurses] cannot cope, especially because it’s permanent dentition.** **P17p2line27**

*We just keep them [adult PSC][N] on I think even after the twenties. I still have a patient forty something patient and I still maintain her… I have no issue, but the only problem is when it comes to denture making, I don’t have facilities for denture here. **P18pg7line12**

However, limitations exist in that paediatric nurses have limited skills in managing adults and there was lack of facilities to offer prosthodontic treatment options.

**5.8.1.3 Policies and formal care pathways for PSCN**

Policies governing PSCN within the dental services and within strategies recently developed under the Ministry of Health were inclusive with the general population.

*No, there are no specific mention [of people with special care]. We are trying to provide a comprehensive care for everyone including the special care dentistry… strategic goals like reducing waiting list and waiting time, this applies to all patients **P22P10line22**

These elements of inclusion of PSCN served as a facilitator, however the need to recognize the social determinants for PSCN to access health services, including dental care in paramount in the success in planning their inclusion within the
services. A participant expressed that a directive much like those done for older people should be implemented for PSCN to facilitate their care.

*Our queue time actually maybe we can implement for this type of patient [PSCN], maybe like golden citizens - … Just screen them earlier. Maybe just see them earlier than making them wait for a long time.*  

**5.8.1.4 Medical collaboration**

The existence of a paediatric dental specialist unit also enabled collaboration between medical colleagues in the Child Development centre (CDC) to plan integrated care pathways for children with special care, which included dental assessment and advice during home visits.

> [in CDC] we carry out home visits for patients who are disabled, those unable to walk, with epilepsy and all that, basically for any patient who is just lying down at home. We will go with a [medical] doctor, physiotherapist, medical nurse, speech therapist sometimes, the medical social worker and us dental.

The introduction of new medical specialties in Brunei with the return of respective specialists such as neuro-stroke units and geriatric units also acted as a facilitator for care. These new medical clinics highlighted the need for dental-medical collaboration and hence was serving as a driver to provide SCD.

> There are a lot of people, stroke patients, especially you see they one side is not working for them or maybe paraplegic or all of them are not working. So when they are [brushing, how good are the people in taking care of their teeth] So these patients need to be seen. They have a terminal unit here in the geriatric unit. They were liaising with so many other departments for their care. So I think this can help [with providing dental care]. All patients are not in the hospital always, right? They are at home. So maybe we can improve their life. So, we can think about this.

I think like, especially like the rehab unit was just set up, its new… I think things picked up from there. So, they have started to refer patients and so, I think over the past two years the numbers are increasing. On the medical side even on the
geriatric. They would also refer their patients. Before there were no rehab units or geriatric units so now we do a lot of hospital dentistry. P13pg16l31

However, this collaboration also meant that the care was medically-led and hence could result in oral health being left out. As an example, dental personnel were no longer included in the home visits when the CDC was decentralised. Instead, all services, including dental services were re-integrated back to their individual services in hospitals.

Now the hospital is the one stop centre. Put it this way the CDC all were re-integrated into the individual departments P18pg5l25

Now [with no CDC], they no longer bring dental anymore for home visits… If they inform us, I would still like to go! P19pg13l28

5.8.1.5 Summary – Access in primary and tertiary settings

There were facilitators and enablers identified in both primary and tertiary/hospital setting in the provision of dental care for PSCN. Whilst primary care health centres were physically accessible (close to home) and were available daily, the set-up was not orientated to accept PSCN. There were no policies or pathways targeted for PSCN to address the disparities in care and as a result they faced the same barriers as the general population, but with poorer outcomes in terms of access as reported by participants in this study. The presence of tertiary settings acting as primary care providers addressed these gaps but there were still limitations on the range of treatments provided for these group due to lack of facilities, lack of skills (for example dental nurses providing care for adult patients for whom they have not had training or limited options in restorative care provided by oral surgeons) and also the lack of continuity of care. New medical specialties identified relevant PSCN, for example those in rehabilitative centres, geriatric patients and non-ambulatory patients from CDC who required more targeted SCD. However, there was a
tendency and dependency towards the medical units to direct this care and as with other more prioritized services, dental care was often overlooked.

**5.8.2 CULTURAL CONTEXT**

The cultural context in Brunei plays a big role in the provision of care for PSCN. The study uncovered how Brunei’s cultural identity and upbringing influences providers in their care, particularly with respect to the role of Islam and family in cultivating a sense of responsibility among providers, hence facilitating care. The study also uncovered the providers view on how the society perceives disability in Brunei.

**5.8.2.1 Role of Islam**

The role of Islam, which is Brunei’s most predominant religion also emerged within the data. A participant described how Islam urges its followers to care for those who are vulnerable, including those with disabilities. These vulnerable people were viewed as valued members within the society and providing care for them was a way to gain goodwill from Allah.

*We always said something like it’s for getting into Heaven. Don’t ever think they are a burden. Instead, it’s the other way round. When you are taking care of these children, Allah Ta’ala will give sustenance… it’s not that difficult as Allah is always there helping us. Like for me, this work it’s true that most of our patients with special needs have different types of characters so we pray every morning, we make dua. Allah always helps.*  
*P15pg20line4*

**5.8.2.2 Role of family and upbringing**

One participant emphasized on how his upbringing in addition to having someone in his family with a disability had influenced his way of providing care, to be more empathic and to try and help as much as he can.

*Having a brother with autism isn’t easy. a lot of communication problems, a lot of arguments, a lot of fights, and then you know, and my mum is very willing to help*
people, even if she’s going out of her way to do it. So like I kind of like grew up seeing that, and that kind of like maybe- you know how you always look at your parents as your idols, your role models and you’re just going to be like them, so I guess that contributed quite a bit. Having you know, empathy is a big part I think. I think some special needs patients don’t want you to feel bad for them, yeah. So I try not to do that, so I see them as- see if I was an issue, would I like to be treated this way? Would I like to be neglected? You know? They’ve already gone through maybe like a lot of hardships through their life, if I could help them out a little bit, you know, why not? P12pg16l6

5.8.2.3 Professionalism

Although some participants believed that cultural upbringing affects how people with disabilities were cared for, a participant believed it was professionalism and sense of responsibility as a major factor in cultivating their duty of care to these patients.

In my thinking, I do not consider culture is part of it, don’t think so. I mean I do know that what we are obliged to do is that we should help each other, irrespective of who you are. So if it's in our culture then it is illogical to me that some of our patients, some [providers] may reject them. So to me it's not about culture. It’s not really affecting. Not a major one. Maybe yes in some areas. But it’s more or less professionalism. P22pg5line36

5.8.2.4 How society perceives disability

There were mixed views among the providers how Brunei society perceives people with disabilities. Some participants were still concerned about stigma over PSCN and how parents fear whether their child would be accepted in society.

Society does not like special needs child. I think it’s very difficult. Nobody wants a special needs child. I think that’s the sad thing. Adoption cases and they [parents] feel tricked. They do feel tricked. But at the end of the day, they also love the child because it is a love of pity. Rather than I really love you. P18pg15l32

Patient with bipolar or schizophrenia, because they are pretty hush hush about it in Brunei. Sometimes I’ll ask them, “are you under psych, like that”, “oh no no”. But it
says in your notes that she’s medicated and stuff… It’s a culture here. That’s what I’ve been told and that’s what I see. \textit{P12pg9line3}

One of my patient, the parents didn’t accept their child is special. They told me that the child is not under UPK (Special Education Unit), but is a special need. So I told her okay. He didn’t even want her to check. Not even a little bit. She could only do one quadrant. He was about to do scaling. So I told her okay, I will send an appointment. Then I asked the parent, is your child…? They denied it and said he’s normal. That means the parents didn’t accept. But the way the child talks, you can see it from his face. It’s a learning difficulty, a bit slow. \textit{P14pg24l23}

Despite the negative views surrounding PSCN, participants believed these were old views. Society in Brunei was now more accepting of people with disabilities and a participant expressed the need to support education in schools for disability awareness.

If we ask them to go to primary care, some parents were reluctant to go… They’re afraid of the stigma. They will say it’s difficult to bring my child, with his wheelchair and his behaviour, don’t want their child to cause anything… But I don’t think society nowadays are… they are more open. They are acceptable. It’s just the fear from the family. Fear that it might be the same thing as it used to be. Especially older parents. \textit{P22pg3l23}

Parents are not embarrassed. These parents want treatment. They don’t want their kids to be neglected. They want their child to get treatment. \textit{P17pg14l12}

They need to be taught from the beginning. The teachers as well as the students. They need to know what Special Needs child is. Most of the schools, some of the schools don’t accept. These kinds of things had to be eliminated first. If a child does not know how to treat a special need care child, doesn’t know how to treat them well. It’s a failure. So where does that child learn? In the family and at the school. So, the teacher also has to learn that. How? What are really the special need children. How are they going to blend in to their system? Of course, you have to educate our younger generation, the community basically. How are we going to take care of the geriatrics? It’s just not the age we are treating, the whole person as such. Yes, there is a big lack in that, everywhere, it’s not just in Brunei. We need to know how to treat them. They are old but they need to blend in with the generation. So
that’s where we need to teach the, how the community, how to take care of them.

5.8.2.5 Hierarchy of PSCN
The mixed attitudes and opinions regarding people with disability reflected the hierarchy discussed in Section 5.6.1. A participant also emphasized the possibility of a hidden group of PSCN for whom dental care may not be accessed as they are sheltered at home with no access to care.

I think there’s sometimes parents who really keep them at home and they had, because they have no medical issue. They keep them on a good diet and everything. They are actually just hidden in the system. I mean they are not even registered in our BRUHIMS [patient electronic system] also. They just stay at home.

5.8.2.6 Summary – Influence of Islam and culture in providing care for PSCN
As a small welfare state, with strong Islamic philosophy and a close-knit community, Brunei has generally had positive attitudes towards people with a disability. However, there were still a few participants who believed that the stigma associated with disability remained and that society might not accept or acknowledge PSCN. As a result, they suggested that there was a group of PSCN who were hidden. These mixed views also contributed to the hierarchy of PSCN described in earlier sections.

5.8.3 The Workforce
Barriers and enablers pertaining to the current workforce was also one of the themes that emerged in the study. Workforce capacity, their attitudes, their skills and training, and their ability to make things work were discussed.

5.8.3.1 Workforce capacity
Workforce capacity were discussed in section 5.5.
Participants expressed that shortages of healthcare providers in meeting the demand of dental care was a barrier to care. As a result, they felt that they were too busy or too overburdened to be seeing patients with special care needs currently.

*It's difficult for us the normal general, primary care operators to see them regularly. We don't have that kind of system because we don't have that kind of manpower. Because of the volume of patients we have to see, we try but it is dependent on the dentists themselves, so I cannot really say that everyone’s going to do it or even I’m going to do it all the time.*  

The established workforce in Paediatric Dentistry was a facilitator to care. However, with most of the team retiring in the next five to ten years and without a succession plan, this was seen as a future barrier to care.

*They [the paediatric nurses] kept on telling me that they are old already. They're coming fifty, they need successors. but there are limitations. We have to understand our manpower are limited, those who quit, those who retire, and those who were newly trained. This is true even for the paediatric specialists.*

### 5.8.3.2 Skills and Training

The number of those who had completed BST training had increased and these BSTs had had some training in managing PSCN. This increased trained for BSTs was considered a facilitator in providing care as providers were seen as better able to manage the patients in POCS.

*I'm not happy previously, but when you compare now, it's better. In a sense that we have most of the BSTs are quite trained in seeing them [PSCN]. Some of them have seen a lot, some of them have seen less. But anyhow they are more… most of them have seen a number*  

In contrast, not all service providers had the skills or were comfortable in treating patients with special care needs. This created a barrier when providers were relocated to a different clinic or when they had to leave POCS to undergo BST training.
The only problem would be, if we had to move, we would have to do the hand-over process to someone else and it would depend on the following, whoever would come and replaces me, if they would be happy to take on that. Because if they are not comfortable in doing it, I'd rather it be transferred to someone who would be a little more comfortable, more willing to take it on. P8pg5line9

This lack of knowledge and training in management of patients with special care needs also encompassed the supporting staff. Hence, the fear and discomfort experienced served as a barrier for patients to acquire proper treatment.

My support staffs, my assistants are not comfortable with these situations. They basically run out of the room. So, they are not comfortable in seeing these situations. I mean they are some who are comfortable in giving you a hand. They’ll help talk to the patient, they’ll distract the patient, they’ll hold the patient if required so they don’t cause damage to anybody but not everyone is comfortable in doing that. So I was on my own. P8pg12line15

Service providers reported that having the right team with the right skills could facilitate care for PSCN. For example, the receptionist recognizing the patient during first contact who communicates it to other members of the dental team, so enabling these patients to be seen earlier and also informing other dentists so that they are aware and hence enabling their colleague to have time to provide the appropriate care for patients with special care.

I understand in a busy OP, it’s not easy to be patient with these kinds of people. But maybe you can space it out, if you see a, because the person at reception they can understand what type of patient it is, so they can hint you before itself that this is the type of patient coming in. So you just space your time so you can give enough time for a patient and not have a burden on your head saying there are so many patients waiting, you cannot. It makes things easier; you don’t have to pressure on you always so that time even you are calm because you being calm is very important than the patient being. Because if you all are not calm, it is very difficult to handle. It needs a lot of patience. P3pg13line13
Having the right skills, or in this case not having the right skills could pose as a barrier. Patients with special care needs who required general anaesthetic to accept dental treatment were referred to specialists in oral surgery whose repertoire limited to extractions and oral surgery. As a result, the patients might be deprived of essential restorative treatment such as restorations and endodontic treatments.

[The oral surgeons] have never... routine fillings they don't see, their patients are for surgery only, impacted teeth, they all only do extractions, no fillings, no scaling, only the dentist on rotation would do it. P17pg17line6

Upon enquiring the oral surgeons, they acknowledged that they have limited skills when it comes to restorative treatment. As a result, they would arrange for their BST trainee to carry out such treatments. When their BST trainee were not available, they would step up and still carry out restorative treatment as opposed to confining themselves to their usual scope of practice in the aim to render the patient dentally fit in a minimally invasive way.

We [oral surgeons] do whatever treatment has to be done. To make that patient deemed dentally fit. So, if there's an any teeth of poor prognosis that needs to be extracted, we extract. Usually, we do scaling and then any teeth that can be restored, we restore. it will be us (doing the treatment). So, it takes a very long time for us to do. So, like when we do an examination it takes an hour, quite long. Unless you know with extractions you know, straightforward for us. if it's a lot of restoration is slow for us because it's not something that we used to on a daily basis P13pg3line1

5.8.3.3 Attitudes

Attitudes of service providers were discussed in section 5.7.3. Providers reported that they experienced fear and discomfort when it came to managing PSCN. They reported avoiding patients and were very negative about PSCN as a patient cohort.
These negative attitudes acted as a barrier to care. In contrast those who had some experience (often working through their initial discomfort) were more positive. The latter appeared to have had access to some prior training or in one case had a sibling with disabilities.

Positive attitudes among providers also came from their cultural Islamic context discussed in Section 5.8.2. This cultural context was a facilitator of care, in that providers embraced their ‘duty to care’ and tried their best to manage their patients. However, this created a paternalistic/maternalistic attitude to PSCN, which was far from the inclusive approach called for by the disability rights movement, though this is largely documented within groups living in high income countries in Western Europe and the US and Canada.

5.8.3.4 Summary – Workforce recognised the need to step up to meet the needs of PSCN

Facilitators in workforce included having a well-trained workforce with the right skill set and the right attitudes. Having individuals within the workforce who are problem solvers or who ‘made it work’ acted as facilitators of care but may have masked the extent of barriers within a system that was supposedly widely accessible. Barriers identified were the lack of succession planning in the well-established paediatric dentistry pathway and lack of structured training of SCD with the right expertise, a general lack of knowledge and awareness of disability across the primary dental care system.

5.8.4 Unmet needs

The unknown level of unmet needs, from the hidden groups of PSCN and also those unable to access care identified that the current configuration of the health care system did not identify, target or reach many people with disabilities. Both the POCS and the tertiary care setting were not equipped to target and reach all groups of
PSCN, not provide them with continuing care. PSCN encountered dentistry at two extremes: for those with mild complexities they appeared to access care in the POCS relatively easily; the second extreme was when patients appeared with an urgent emergency presenting with an extreme complexity to a tertiary care centre. A broad range of moderate and severe complexity appeared not to receive care at all. As this example showed, one patient was so out of contact with dental care and supportive oral hygiene that he developed oral myiasis.

The other day there was one with maggots… that they [the specialists] had to operate. The patient was an adult. His mouth was constantly open. They [his carers] didn’t know what entered his mouth. Maggots! P14.22.23
6 DISCUSSION

6.1 OVERVIEW OF FINDINGS

This study was set up to inform the planning and development of a Special Care Dentistry (SCD) care pathway that would be both appropriate to the circumstance and the culture of Brunei. The aim of the study to explore and understand the concepts of disability, the current provision of dentistry for people with special care needs (PSCN), and the facilitators and barriers encountered through the experiences of service providers in Brunei Darussalam, with specific objectives;

1) To explore how SCD is defined by dental service providers,

2) To understand, from the perspectives of dental service providers, who requires SCD and the reasons for this

3) To explore dental service providers’ experiences in providing dental care to people with special needs

4) To identify the facilitators and barriers in their provision of dental care to people with special needs

6.1.1 OBJECTIVE 1: DEFINING SPECIAL CARE DENTISTRY

Participants described SCD as the provision of dental care for wide range of groups of people for whom adjustments were needed to facilitate dental care. A broad spectrum of people were described as requiring SCD including older frail people; people with physical, mental, intellectual, developmental and sensory disabilities; people who were medically compromised as well as people who were socially excluded. This wide range of people in need of SCD was consistent with formal definitions of SCD reported in the literature (GDC 2012; IADH 2013). Further exploration of the PSCN groups uncovered the presence of hierarchy within the PSCN groups, which was influenced by the Bruneian culture. Older people were revered as ‘golden citizens’ and were at the top of the
hierarchy, while people with intellectual disability tended to be at the bottom of the hierarchy and hidden.

6.1.2 **OBJECTIVE 2: WHO REQUIRES SPECIAL CARE DENTISTRY AND THE REASONS FOR THIS**

While the definition of groups in need of special care dentistry was broad, not everyone with a disability or those socially excluded were considered to be in need of SCD. Some participants who treated people with disabilities thought dental care could be managed in a primary care setting. These views mirror expert consensus statements on the groups requiring SCD, for example Dougall and Fiske, 2006 and JACSCD, 2003a. These consensus statements focus on assessing the complexity of the patient’s disability (principally function) and how it directly or indirectly affects oral health (Faulks et al., 2012, IADH 2015). Statements based on the International Classification of Functioning (Faulks et al 2006) relate the impact of disability (including social exclusion) to the individual’s personal and environmental context. The need for SCD is therefore assigned on the basis of ‘complexity’ in addition to the adjustments and the adjuncts needed to provide and facilitate dental care. For example the British Dental Association (BDA) Case Mix tool (BDA, 2019; BDJ Team, 2019) identifies six aspects to enable the assessment of complexity: patient’s ability to co-operate with dental care, ability to communicate which identifies any issues in interaction and communication between the patient/parent/carer and the dental team; medical status reflecting any adjustments that needed to be made prior to providing dental care; oral risk factors requiring more resources to facilitate care; access to oral care at any point during their course of treatment and lastly, any legal and ethical barriers to care. As was the noted in Brunei, cultural expectations are part of the personal and environmental context (Faulks et al 2012). Reverence for older people, and ‘duty of care’ may also be seen as a positive environmental context should you be an older person. The case of intellectual disability
is more nuanced, with some participants reporting that in their experience parents of children with disability might view this as a punishment from Allah. This might explain the ambivalent attitude to intellectual disability as a priority group amongst participants.

The orientation of the workforce in the present study was largely positive towards PSCN. While participants recognized a spectrum of people with disabilities requiring SCD they lacked the knowledge, skills and training to describe that complexity and its impact on oral health, access to dental care and delivery of dentistry.

These findings showed that some participants, whether they were aware of it or not, were adopting an inclusion approach for PSCN, as adopted by the UNCRPD 2006. However, ‘equal’ care for PSCN as described in these interviews was far from equitable.

6.1.3 Objective 3: What are the experiences of providers in Special Care Dentistry?

An array of experiences in providing care for PSCN were recounted by participants. The qualitative nature of the study allowed the divulgence of participants’ thoughts and views in a more in-depth manner, hence uncovering the complex, nuanced and layered experiences of the participants. There was:

1. Little engagement and contact with PSCN, suggesting access to dental care was poor for people with disability as clinicians in interviews were largely unfamiliar with this group of patients.

2. The encounters with PSCN were largely in the tertiary/specialists settings, during their Basic Specialty Training (BST) but this experience was not built upon through mentoring on their return to primary care.

3. The lack of training and mentoring opportunities perpetuates participants’ discomfort and fear which led to avoidance in providing care for PSCN.
4. Participants felt the busyness of the primary care clinics outpatients was not an ideal setting for management of PSCN.

All participants reported having seen some groups of PSCN. From their experiences, the researcher was able to map out the PSCN patient journey in attempting to access dental services in Brunei (as seen in the Figure 16). Arrangements were chaotic and ad-hoc. There was no clear patient journey which most likely made dental providers feel unsupported in providing dental care for people with disabilities. These findings are commonly reported in the literature where the dental team report poor access to care (Chalmers et al 2001, Fiske 2010, Faulks 2012, but unlike Brunei, some dental clinicians report refusing to treat patients (Rashid-Kandvani et al., 2015)
Figure 16 Current pathway of PSCN accessing dental services
6.1.4 **Objective 4: The facilitators and barriers in their provision of special care dentistry**

Access to dental care is a complex for PSCN. Facilitators and barriers experienced by providers could be observed over four key areas:

1. **The structure and organisation of dental care delivery**
   - Primary care was close to home and was available daily with an all treatment provided approach, but the setup was not orientated to accept PSCN.
   - No policies and care pathways were targeted for PSCN – patients faced the same barriers as the general population.
   - Tertiary centres acted as a primary care provider, but had limitations in its provisions.
   - Medical specialties had been introduced and had begun to facilitate patient identification, but it was very much medical-led.

2. **The dental workforce**
   - The concerted characters of ‘avoiders, ‘problem solvers’ and ‘the specialists worked well in meeting the expressed needs of PSCN.
   - Lack of experiential knowledge and skills among providers acted as a barrier to providing care, despite their positive attitudes.
   - Lack of succession planning and capacity building plans could act as a threat to the well-established paediatric pathway.

3. **The cultural context**
   - Cultural influences cultivated positive attitudes towards caring for PSCN, particularly older people. However, the hierarchy of disability seen may suggest there was discrimination against other disabilities.
4. The level of unmet dental need – the unknown level of unmet need, the ‘hidden’ groups and the those who were unable to access care was identified as a barrier to providing SCD.

6.2 Findings of the study in relation to other studies

6.2.1 Ability to treat versus willingness to treat

There was a clear tension between having the skills to treat PSCN and willingness and disposition to do so. The study highlighted a group of providers who have stepped up and driven the care for PSCN when there were no services available. This group of ‘people who made things work’, namely the paediatric dentists, paediatric nurses and oral surgeons had masked the problems and deficiencies with how dentistry for PSCN was organised and/or other colleagues’ reluctance to treat. Other studies have also identified the importance of the individual clinician trying to make amends for the deficiencies of the wider health care system (D’Eath et al., 2005; Grant et al., 2004). However, the present study also showed that despite some individuals going above and beyond the call of duty for these patients, there were still huge gaps in service and unmet need for care. This inequality is also an issue faced by people with PSCN globally (Faulks 2012, Watt et al 2020).

In contrast to those who were willing to treat, there were another group of providers who would shy away from providing care for PSCN and would prefer other members to carry out the treatment – ‘the avoiders’. The honesty of the participants was surprising especially when they indicated that they were still willing to treat if there were no other clinicians available. This attitude seemed slightly more positive than the usual trend reported in the literature where providers were not avoiding, but actively were refusing care (Rashid-Kandvani et al., 2015). This suggested that the ‘avoiders’ were willing to treat but it could be speculated that they needed training to build their confidence. Nevertheless, this study highlighted gaps within the dental care system with regards to
mentoring and training the dental workforce in Brunei, especially new graduates. The issues were not just in relation to PSCN but to all aspects of dentistry. This suggests a need for better assessment, mentoring and a structured training for the dental workforce in Brunei.

6.2.2 The need for training and education to increase knowledge and awareness of needs of PSCN

There was a lack of awareness of the needs of PSCN and negative attitudes identified amongst the providers within the POCS. This was highlighted by their use of non-inclusive and sometimes imprecise language to describe PSCN, the simplistic understanding of the needs of particular groups of PSCN and likening the service they provided as equal care when it was clearly inequitable. This suggests that encounters with PSCN in POCS was mostly with people with mild complexity. In contrast, participants who were in tertiary settings were more knowledgeable and experienced in managing those with complex needs. This lack of knowledge and awareness has been reported in numerous studies reporting on dentists and the wider dental team in Malaysia (Ahmed et al., 2015); Saudi Arabia and USA (Alkahtani et al., 2014); Australia (Derbi & Borromeo 2016) and Canada (Perusini 2016). In Brunei, a study on the knowledge and attitudes towards mental illness among primary healthcare nurses reported that nurses displayed poor knowledge and negative attitudes towards these groups and recommended re-education and increased contact time as a method to promote positive attitudes (Shahif et al., 2019). The findings from the present dental study suggest similar issues for disability and a need for more inclusive and positive attitudes.

The literature suggests that a provider’s refusal to treat PSCN was related to aspects noted in the earlier paragraph: the provider’s lack of knowledge, lack of skills and training and low confidence in management of patients (Scrambler et al., 2011; Naseem et al., 2016; Ahmed et al., 2014; Bindal et al., 2015). The present study confirms findings from other settings in relation to barriers to care that are attributable to skills and training gaps.
These deficiencies are amenable. Provision of education, training and increased knowledge has been shown to improve attitudes and also the confidence levels of providers which improved their ability and willingness to treat PSCN (Wilson et al., 2019; Jones & Miller 2018; Scrambler et al., 2011; Naseem et al., 2016; Dougall and Fiske, 2008; Ahmed et al., 2015).

6.2.3 The structure and organization - Physical access

Physical access to services by PSCN have been well researched and studies show that people with disabilities, particularly physical disabilities find physical access into dental surgeries to be the main barrier to care (Rashid-Kandvani et al, 2015; Baart & Taaka, 2018; RCS and BSDH 2012; Leal Rocha et al., 2015). Another factor uncovered in the present study was the proximity of the centres to PSCN. In this study, it was noted that whilst all tertiary centres provided physically accessible structures and facilities, they were not in close proximity or easy reach to the homes of PSCN. The opposite was true for primary care centres which were well distributed amongst population centres but had very poor provision for physical disability. However, there has been an improvement in access to newer primary oral care clinics. This was most likely from the changes in legislations on Building Control Order 2014 and Building Control Regulations 2014 in 2015 (United Nations General Assembly, 2019).

6.2.4 Treatment provided - Reactive versus proactive treatments

Other than those in paediatric dentistry specialist settings, the study found that the dentistry provided for PSCN were largely reactive as opposed to proactive and preventive. Participants felt that the management of pain was prioritized over the holistic and on-going preventive care that in their view was equally important. Similar findings were reported in Brunei by Venkatasalu and colleagues when reporting on the perceptions of healthcare professionals including dentists regarding the care of oral conditions among palliative patients (Venkatasalu et al., 2020). This study reported that
the management of oral complaints was ad-hoc in that they were raised by the patients or carers, rather than patients being screened. The study also suggested that oral health was not a priority among these patients and on-going continuing preventive care was needed. However, it was noted that with the high prevalence of dental disease in Brunei, it should be acknowledged that a greater emphasis on preventive dental care measures for the general population is paramount, not just specifically for PSCN. Although providers acknowledged that holistic care for PSCN was required, most treatment given were largely emergency (Smith et al., 2010; Bindal et al., 2015; Rocha et al 2015; Cruz et al 2016). This chimes with the literature in that people with disabilities tended to seek treatment only when they had dental problems, usually acute dental pain, requiring urgent care and immediate pain relief (Hamzah, 2010). Thus, the method of delivery of care got perpetuated.

6.2.5 CULTURAL CONTEXT - HIERARCHY OF PEOPLE WITH DISABILITIES

The hierarchy of disability in Brunei described within the study was a surprising finding. Although this hierarchy could not be explored in-depth, it might be speculated that some types of disability were more accepted in society than others. While great efforts were carried out for some groups of PSCN, some groups were not being seen at all and appeared to be ‘hidden’. A study by Tringo in 1970 studied the hierarchy for preference of disability groups among 455 students and concluded that the presence of a hierarchy was an indicator of negative attitudes to disability, but theses prejudices decreased with increased knowledge. Thirty years later, Thomas replicated Tringo’s study in 2000 and found that prejudices persisted (Thomas, 2000). While it is commendable that older people receive priority for dental care in Brunei, it might be speculated that it also suggests prejudices against other groups.

With regards to access, Fiske et al 2010 in ‘Commissioning Tool for Special Care Dentistry’ (England) noted that there is evidence that people/groups in residential care (such as older people, people with learning disability or mental health problem, people
who are physically or medically compromised and people in secure units) had poorer oral health outcomes than other groups of disabilities, but these was due to restricted access to dental care as opposed to the attitudes of providers. A literature review of barriers to healthcare revealed that people with intellectual disabilities, mental health conditions and those with sight or hearing impairment were rarely included or not included at all in studies of people with disabilities (Baart & Taaka, 2018). Therefore, within the umbrella definition there are groups who are more visible than others.

The dental care provided for all PSCN in Brunei, including older people was episodic. Care for PSCN was not targeted. PSCN were left to negotiate accessing dental care themselves. From the interviews it appeared that PSCN encountered dentistry at two extremes: in primary care when PSCN with mild disabilities attended with minimal dental needs or in an acute tertiary setting where PSCN with severe and complex disabilities were admitted with acute dental needs. In the latter it was evident that there had been no contact with dental services previously. It was unclear from participants whether people with moderate and severe dental needs (without symptoms) ever encountered oral health services. There is a clear need for a dental care pathway for PSCN in Brunei.

6.2.6 CULTURE CONTEXT - ROLE OF ISLAM AND CULTURAL TRADITIONS

The Islamic principles and Bruneian culture are instilled into all aspects of life of the people of Brunei (Haji Serudin, 2013). The present study showed that Islamic principles were reflected in the participants’ professional behaviour and attitudes towards PSCN. Participants displayed a positive disposition towards the care of PSCN and were very protective of these groups in a paternalistic/maternalistic way. The teachings of Islam are positive towards disability; It acknowledges that disability is a part of human nature and emphasizes that the care of individuals with disabilities is part of a Muslim’s social responsibilities and duties (Al-Aoufi et al., 2012). Islam also chimes with the social model of disability and emphasizes that society must resolve the inequity for those who are disadvantaged (Bazna & Hatab, 2005). Furthermore, a Muslim’s faith and their beliefs in
Allah, in particular the belief in fate as well as the concept of ‘reward and punishment’ is inherent in Islamic culture and is seen as an essential driver in the actions, intent and motives of those providing care (Al-Aoufi et al., 2012). Hence it was understandable that some participants were avoiding or referring patients quickly if they believed that they lacked the knowledge or the skills to provide the right care for these group, so protecting them from harm. Recent revisions to the American Dental Association principles of ethics code of professional conducts in Section 4A specify that dental care providers cannot deny care to patients because of their disability and should instead be referred to dentists able to provide the necessary care (ADA, 2018).

The importance of cultural differences was evident in the reactions to disability observed in the study. Brunei’s culture of viewing older people as a respected member of the family and society has made older people a prioritized group within the PSCN, a perspective reported elsewhere in the literature (Cleary & Maricar, 2000). A recent study exploring palliative care in advanced cancer patients in Brunei has also highlighted the role of Islam in Bruneian health care and the importance of incorporating cultural beliefs and traditions in achieving successful outcomes (Haji Husaini, 2018).

The primary role of family in decision-making was also observed in the present study reflecting the traditional medical model approach to consent in Brunei for people who were unable to consent for themselves, adopted from Part X of the Mental Health Order 2014 on section 65 (b) “If the patient is incapable of giving consent- (i) in the case of a minor, by his guardian; or (ii) in the case of an adult, by a relative.” (Constitution of Brunei Darussalam, 83(3), 2014, pp 336). The legislation however is silent on measures required to promote self-empowerment and autonomy.

This protective ‘duty of care’ towards people with disabilities may be a potential for conflict among dental providers in Brunei. Inclusivity and empowerment for people with disabilities as per the disability rights movement, would be in direct conflict with current
legislation and practice in Brunei. It is likely to be an emerging theme as the presence of
disability movement organisations, particularly SMARTER and the Brunei Darussalam
National Institute for the blind suggests disabled groups are keen on support and the
Despite the positive attitudes in Islam towards disability, the literature suggests there
were also superstitious beliefs that disability was a punishment or curse from Allah, or
Allah’s bidding which should be obeyed (Bazna & Hatab, 2005; Al-Aoufi et al 2012). As
a result, parents refused dental treatment or they refused to provide care for their
children, despite the lack of contraindication between God’s will and seeking treatment.
This superstitious belief was suggested to be the parent’s way to cope with anxiety and
shock, as well as to defer from carrying out their duty properly, including seeking
appropriate care for their child (Bazna & Hatab, 2005; Al-Aoufi et al 2012). No
participants in the present study reported a negative view of disability as a punishment
or curse, but it is an issue that should be carefully monitored during training of the
workforce.
### 6.3 STRENGTHS AND LIMITATIONS OF THE STUDY

**Table 10 Strengths and limitations of the study**

<table>
<thead>
<tr>
<th>Strengths</th>
<th>Limitations</th>
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<tr>
<td>New insights into providers perspectives in provision of care for people with disabilities</td>
<td>Recruitment restricted to providers under government services only, and “worker bees” were not recruited</td>
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<td>Maximum variation sampling to include all providers of different professional roles and working experience</td>
<td>Researcher known to all participants – could introduce bias in answering</td>
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<tr>
<td>Appropriate methodology using qualitative research</td>
<td>Interview guide could have caused some confusion by using the terms special care dentistry and people with disabilities interchangeably</td>
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<td>Reflexive in practice</td>
<td>The views of service users and carers were not included</td>
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<td>Use of gatekeeper to recruit participants</td>
<td>Medical doctors or specialists mentioned in the study were not recruited</td>
</tr>
<tr>
<td>Ethics approval was obtained in both TCD and in Brunei</td>
<td>Researcher did not explore empowerment in people with disabilities or probe further on the paternal/maternal attitude of providers towards people with disabilities</td>
</tr>
<tr>
<td>Use of another researcher to translate and back-translate</td>
<td></td>
</tr>
<tr>
<td>Training done in qualitative research</td>
<td></td>
</tr>
<tr>
<td>Several strategies used to ensure trustworthiness of data – bracketing, transcripts verification and a research team overviewing data</td>
<td></td>
</tr>
</tbody>
</table>
6.3.1 STRENGTHS

This was the first study done in Brunei exploring the provider’s views on the concepts of disability and how services for PSCN were carried out. This study will also act as a baseline for research in the development of services for PSCN in mapping existing services from the perspectives of the providers.

The strengths in this study stemmed from the qualitative method of research used. The method allowed an in-depth exploration of all providers potentially involved in the care of PSCN. The maximum variation sampling of support staff, nurses, assistants, clinicians, specialists, managers and policy makers produced rich data that allowed an understanding of the research topic. A gatekeeper used in the recruitment of participants reduced the pressure for participants to be recruited. There was a wide variant sampling approach and identification of key informants through snowball sampling ensured a comprehensive development of rich data.

Ethics approval was obtained from both Trinity College Dublin and Brunei Medical and Health Research and Ethics Committee was sought. General Data Protection regulations 2017 were adhered to and changes obliged.

The adherence to quality guidelines for the qualitative research conduct described by O’Brien and colleagues ensured rigor and trustworthiness and were maintained throughout the study (O’Brien et al., 2014). This included transcripts in Malay translated and back-translated by another member of the research team; and trustworthiness was ensured through having a research team to review data collected, transcripts verification and bracketing, independent coding and consensus on final framework. Reflexivity was maintained throughout the study (section 4.14).

The researcher underwent several training sessions on research methods and qualitative research prior to conducting the study.
6.3.2 LIMITATIONS

The limitations in the study included the limited sample of the population of interest. Although efforts were made to include all informers, the study may not be inclusive of all service providers. Whilst the participants involved were motivated and agreed to the take part, there was a 52% refusal in participation. This may indicate not everyone was sufficiently interested in disability to be included within the study. Some refused because they were not able to spare time.

As demonstrated in this study, the definition of PSCN is broad and involved a large variety of groups of patients with a range of needs. Studying these groups as a whole was a limitation. Focus on individual groups of PSCN could have resulted in a more focused study. The main researcher who carried out the interviews was a staff member in the organization and also studying for a postgraduate degree in SCD which may have influenced participants’ response. However, every effort was made to prevent this – use of gatekeeper, and reassurances that the research was about gathering information as opposed to service inquiry.

The participant leaflet provided to participants stated that the research was about people with disabilities, while participants were asked about special care dentistry in the interviews. The participant leaflet may have suggested to the patients that SCD was pertaining to people with disabilities.

Another limitation was that people with disabilities, or their carers were not included – so their opinions on access were not explored. It should be acknowledged that the views of service users and their carers may differ from the views of providers as their cultural backgrounds and perceived needs may impact access of care differently as discussed in Section 3.8.3 (Hamzah, 2010; Macgiolla Phadraig et al., 2015; Lee et al., 2017; Blaizot et al., 2017)
Another group that could contribute to findings were medical doctors and staff with whom medical collaboration was needed. Their opinions in how services were accessed could have added more perspectives within the care pathways.

In this study, the theme of empowerment and disability in people with disabilities was not explicitly probed for. This was noted to be a crucial factor in predicting potential conflicts if services were to be designed on the basis of an empowerment model much like the inclusion in the western model.

6.4 **Implications for Policy**

1. Policies in health should include targeting PSCN as vulnerable groups, to recognise the social determinants of health that impacts oral health and access to care.

2. Policies should be planned to identify and target the hidden groups of PSCN. This could be done through investigating disability registries.

3. Policies should include prevention strategies central in oral care services for the general population of Brunei, not just for PSCN.

4. Policy to ensure training for all workforce regarding disability awareness to allow them to identify and have knowledge of reasonable adjustments needed.

6.5 **Implications for Practice**

1. There is a need for education on disability awareness for all dental workforce including support staff, using the UNCRPD as reference in adopting equitable access to oral health care.

2. There is a need for structured training and mentoring in SCD for new graduates to identify their strengths and weaknesses and to provide support on the first few years of working to enhance positive experience in SCD.
3. There is a need to emphasize the importance of oral health to all providers and it should be incorporated within assessments, care planning and care processes for PSCN.

4. There is a need to design a care pathway to improve access for all PSCN, from mild to severe complexities including specialist care

5. Physical access to dental treatment facilities will need to be improved
   - Accessible infrastructures
   - Information on which clinics are accessible should be widely available

6. There is a need for greater emphasis on prevention and continuity of care

7. A concerted effort should be made to close disparities in oral health for people with disabilities in PSCN and target these groups to enable timely and appropriate access

8. There is a need to identify potential providers in SCD to facilitate succession planning.

6.6 Recommendations of future research

1. A study on the views of people with disabilities are essential in the development of services. This study should include the patient experiences and views on SCD and their access to dental care to the planning of services.

2. An oral health needs assessment using a validated complexity tool is required of PSCN in Brunei. This needs assessment will inform the resources and manpower needed to ensure the success of care pathways for PSCN.

3. Lastly, with the introduction with medical departments such as geriatrics medicine, palliative care and neuro-stroke units, a study on how oral health can be integrated into their care pathway should also be explored.
7 CONCLUSIONS

- Providers defined SCD as the provision of dental care for a wide range of groups of people for whom adjustments were needed to facilitate dental care. A broad spectrum of people was described as requiring SCD including older frail people; people with physical, mental, intellectual, developmental and sensory disabilities; people who were medically compromised as well as people who were socially excluded.

- There was a hierarchy among people with disabilities. Older frail people – ‘The golden citizens’ were prioritized, this may suggest prejudices and hidden biases towards other groups living with disability, particularly those with intellectual disability.

- Islamic principles and Bruneian culture cultivated positive views towards people with disabilities; in that it was their duty to look after those less advantaged and the concept of ‘reward and punishment’ in Islam was seen as a driver in their actions, intent and motives.

- Experiences in SCD were varied among providers.
  - Encounters in the primary oral care settings were mostly of people with mild disabilities and people with more complex or extreme complexities were seen in tertiary settings, usually by a small number of specialists and basic specialty trainees.
  - Some groups of disabilities, for example those with moderate complexities were hidden and appeared underserved.
  - Provision of dental care were reactive as opposed to proactive. Very little prevention care was provided.
  - There was no formal or informal care pathway for PSCN, though individual clinicians made things work – the problem solvers.
Providers expressed fear, discomfort and avoidance on encountering PSCN.

Facilitators identified for a care pathway were the primary care focus and the structure and organisation of existing dental services in Brunei; the role of Islam and the family in cultivating a duty of care amongst providers, the introduction of medical departments specifically targeting and reaching PSCN; professionalism and individual ‘problem solvers’.

Barriers for a care pathway identified were lack of policies; lack of knowledge and negative attitudes towards providing dental care for PSCN amongst the dental team. The lack of training and mentoring opportunities perpetuated participants’ discomfort and fear which led to avoidance in providing care for PSCN - the ‘avoiders’.

The primary care focus of dental care in Brunei has the potential for optimal configuration of services for PSCN.

A formal care pathway is required to ensure optimal reach and appropriate access for all PSCN. This should be accompanied by structured training and mentoring of the dental workforce for their role in the pathway. Contextual issues in Brunei such as the role of the family and Islamic culture and attitudes to the disadvantaged, and the presence of individual ‘problem solvers’ presents a good platform on which to build this pathway.
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## Appendices

### Appendix 1 Overview of dental caries status in some Asian Countries

(Source: Pitts et al, 2011. The Workshop on Effective Use of Fluoride in Asia)

<table>
<thead>
<tr>
<th>Country</th>
<th>Year</th>
<th>dmft (5 yrs)</th>
<th>DMFT (12 yrs)</th>
<th>DMFT (35-44 yrs)</th>
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<tr>
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<td>7.1</td>
<td>4.8</td>
<td>14.4</td>
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<tr>
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<td>N/A</td>
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<td>N/A</td>
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<td>China</td>
<td>2005</td>
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<td>1987</td>
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<tr>
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<td>2005</td>
<td>2.1</td>
<td>1.6</td>
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</tr>
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<td>N/A</td>
</tr>
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<td>Japan</td>
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<td>3.18</td>
<td>15.4</td>
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<tr>
<td></td>
<td>2005</td>
<td>0.4</td>
<td>1.9</td>
<td>14.9</td>
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<tr>
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<td>2001</td>
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<td>4.6</td>
<td>N/A</td>
</tr>
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<td>1.1</td>
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<td>N/A</td>
</tr>
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<td></td>
<td>2005</td>
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</tr>
<tr>
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<td>0.88</td>
<td>8.53</td>
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<td>Thailand</td>
<td>2001</td>
<td>6</td>
<td>1.6</td>
<td>6.1</td>
</tr>
<tr>
<td></td>
<td>2007</td>
<td>5.43</td>
<td>1.55</td>
<td>6.7</td>
</tr>
<tr>
<td>Vietnam</td>
<td>2002</td>
<td>6.15</td>
<td>1.87</td>
<td>4.7</td>
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</tbody>
</table>
Appendix 2 Guidelines for primary oral care services for adults
Appendix 3 Approval to conduct research from Acting Director of Dental Services, Brunei Darussalam

Ref no: PERGIGIAN/PPN/734/2006

3rd April 2018

Dr Hani Ayup
Postgraduate Student
Special Care Dentistry
Department of Public and Child Dental Health
Dublin Dental University Hospital
Trinity College Dublin
Lincoln Place, Dublin 2.

Dear Dr Hani,

APPLICATION TO CONDUCT QUALITATIVE RESEARCH IN THE DEPARTMENT OF DENTAL SERVICES, BRUNEI DARUSSALAM

This letter is in response to your 26 March 2018 letter requesting to conduct qualitative research in the Department of Dental Services, Brunei Darussalam. The Department has no objection for you to conduct the research pending approval from Brunei Medical Research Ethical Committee.

Good luck with your research.

Yours sincerely,

DR HAJI MOHIN BIN HAJI MOMIN
Acting Director of Dental Services
Department of Dental Services
Ministry of Health
Negara Brunei Darussalam

DEPARTMENT OF DENTAL SERVICES, NATIONAL DENTAL CENTRE,
OLD AIRPORT ROAD, BERAKAS BB518,
BRUNEI DARUSSALAM.
Appendix 4 Approval to conduct research from Chief Dental Officer, Ministry of Defence, Brunei Darussalam

Possibility of conducting a research with your dental officers

Chief Dental Officer RBLF

To: [Name]

Attachments: [File Name]

--- This message was sent with high importance. ---

Dear Dr [Name],

Thank you very much for your email inviting Dental Officers of the Royal Brunei Armed Forces to participate in your study. I have no objections to our Dental Officers participating in your study and are pleased to support your research. Please find attached a list of currently serving Dental Officers in the RBAF including their contact details who have been informed to expect you to contact them regarding this matter. We wish you every success in your study.

Do feel free to contact me as per the contact details below if you need any further assistance.

Kind Regards

[Signature]

DR JEFRI B.H.A. RAZAK
Col
Chief Dental Officer
Headquarters
Dental Services
Combat Service Support
Royal Brunei Land Force
Brunei Garrison 803510
BRUNEI DARUSSALAM

Tel: +673 3 390415 / +673 8 885563
Fax: +673 2 308020
Appendix 5  Letter of approval to conduct study in Dental Services, Jerudong Park Medical Centre

29th May 2018

Dr. Meera Sahib Kabeer,
Medical Director
Jerudong Park Medical Centre,

Dear Dr. Kabeer,

Ref: Qualitative Research at JPMC Dental Services by Dr. Hani Ayub.

This has reference to the meeting held this afternoon between your good self and the Ethical Committee scrutinising on the request made by Dr. Hani Ayub.

After deliberation, the Committee has come to the consensus that the proposed survey by Dr. Hani will not infringe any confidentiality of patients and JPMC alike. In this respect, the Ethical Committee has no objection for Dr. Hani to proceed with the research. The Committee finds that the survey results will benefit JPMC by providing a third-party insight of our services.

Kindly remind Dr. Hani to sign a Confidentiality Agreement with HR Department prior conducting the research.

Thank you.

Sincerely yours,

Muhammad Hj. Abdul Ghani
Chairman, JPMC Ethical Committee

Jerudong Park B63122, Brunei Darussalam
T: +673 261 1433 | F: +673 261 2461
www.jpmc.com.bn
Appendix 6 E-mail of approval to conduct research in Dental Services, Panaga Health Centre

RE: Request to conduct research involving dentists in your organization

To: Mali Ayup
Cc: 

Dear Dr. Hanj,

Thank you for your note.

I have no objections for our dentists to participate in your study. I hope that their insights will be beneficial to your study.

There are only two dentists here at Panaga Health Centre, and I have included Dr. Padina’s email address for you to contact her directly.

All the best.

Kind Regards,

Fahdii

Dr. Ahmad Fahdii Juraidi
Chief Medical Officer
HMI
Burnet-Shell Petroleum Co. Sdn Bhd
Tel No: 2733/2310
Appendix 7 Ethical approval Faculty of Health Sciences Research Ethics Committee, Trinity College Dublin (Reference No 180403)

Dr Hani Ayup  
Dublin Dental University Hospital  
Lincoln Place  
Dublin 2

Date: 25th May 2018

Ref: 180403

Title of Study: Special Care Dentistry in Brunei Darussalam: What are the experiences of service providers?

Dear Dr Ayup,

Further to a meeting of the Faculty of Health Sciences Ethics Committee held in April 2018. We are pleased to inform you that the above project has ethical approval to proceed.

As a researcher you must ensure that you comply with other relevant regulations, including DATA PROTECTION and HEALTH AND SAFETY.

Yours sincerely,

[Signature]

Prof. Brian O’Connell  
Chairperson  
Faculty Research Ethics Committee
Appendix 8 Ethical Approval from the Medical and Health Research & Ethics Committee, Brunei Darussalam

MHREC Executive Screening Suite
Basement Carpark Level 1
Istana Isteri Pengiran Anak Saleha Hospital
Bintan Seri Begawan BA1710
Negara Brunei Darussalam

Our Ref: MHREC/MOH/2018/6(1) 19th July 2018
26 Zulkaedah 1439

To:
Dr Hani binti Hj Ayup
Dental Officer
In-Service Trainee in Special Care Dentistry
Dublin Dental Hospital
Ireland

Dear Dr Hani binti Hj Ayup,

Re: "Special Care Dentistry: What are the experiences of service providers?"

Thank you for submitting the required document(s) and making amendments to your research proposal. Following review of the amendments made, the MHREC Committee has decided to give full approval to your research proposal.

Please adhere to the conditions stated below:

1. The study should comply to the Guidelines for Good Clinical Practice
2. Any deviation to the study should have MHREC’s written approval
3. Please provide us a report of your research findings

This approval is valid for One Year from the date of this letter or the proposed duration that you have applied for your study, whichever is shorter. If you wish to extend your research beyond this period, you are required to apply to MHREC at least one month before the end of your approval including a preliminary report of your research findings.

All the best with your research.

Yours Sincerely,

Chairperson of Medical and Health Research & Ethics Committee

CC: Setiausaha Tetap
2. Timbalan Setiausaha Tetap
Participant Information Sheet

Special Care Dentistry in Brunei Darussalam: What are the experiences of service providers?

You are being invited to take part in a research study. Before you decide to take part, it is important that you understand why the research is being done and what it will involve to take part.

Please read the following information carefully and if anything is unclear please contact us for more information. Please take time to consider your decision.

What is the purpose of the study?
The aim of the study is to explore how dental services is being provided for adult with disabilities in Brunei Darussalam and to find out what facilitates and what barriers were experienced in providing care.

Why have I been chosen to take part?
You have been chosen because you may or may not provide special care dentistry, whether in facilitating care or in providing dental treatment for these patients.

Do I have to take part?
It is up to you to decide if you want to take part or not. You are also free to withdraw from the research at any time before the data analysis process and do not have to give a reason for this.

What does taking part in the study involve?
If you decide to take part you will be asked to participate in a one-to-one interview with Dr Hani Ayup in which you will be asked to discuss your experiences of providing care for adults with disabilities. You will be asked, through your experience, what has helped in providing care, what issues you have faced and how you dealt with them.

The interview will take approximately 1 hour and can be set up at a time and place of convenience for you. The interview will be recorded and afterwards transcribed so that the A copy of your transcript will be available, if you wish, for you to confirm that it accurately represents your input.

Will my taking part in the research be kept confidential?
Yes. All information that you provide us for this study will be kept strictly confidential. No-one, apart from the principal researcher, will have access to your identity. Your name will not appear on any documents, instead you will be allocated a number which will be used as an identifier. Only you and the principal researcher will know your code number. Your name will not be used in the data analysis or in the write up of the findings. However direct quotes from the interview may be used anonymously in the write-up. Your data will be kept in a safe locked cabinet and will only be reviewed by the researcher and supervisors.

What are the possible benefits?
There might be no immediate or direct benefits to you. This research will help us gain a better
understanding of provision of dental care for adults with disabilities in Brunei Darussalam. This information will be used to inform further study with the aim of ongoing improvement in standards and outcomes.

What are the possible disadvantages and risks of taking part?
There are no known risks but it will require some of your time as outlined.

Who is organizing and funding the research?
The principal researcher is Dr. Hani Ayup, a postgraduate student in Special Care Dentistry in Dublin Dental University Hospital. Professor Blánaid Daly and Dr Caoimhín MacGiolla Phadraig are the supervisors of this research, both of whom have extensive experience in research in the area of disability. The researcher may withdraw your participation in the study at any time without your consent.

Dublin Dental University Hospital is funding the research.

Who has given permission for this study?
Ethical approval has been given by both Faculty of Health Sciences Research Ethics Committee and Medical and Health Research and Ethics Committee, Brunei Darussalam.

Who can I contact if I have any complaints?
Medical and Health Research and Ethics Committee can be contacted via email mhrec@moh.gov.bn if you have any complaints.

Who can I contact for further information?
Further information about the study is available from:-

Dr Hani Ayup (Researcher)
Department of Public and Child Health
Dublin Dental University Hospital. Lincoln Place, D2
Ph. +353(01)6127303
Hani.ayup@dentald.tod.ie

Professor Blánaid Daly (Co-supervisor)
Department of Public and Child Health
Dublin Dental University Hospital. Lincoln Place, D2
Ph. +353(01)6127303
Blanaid.daly@dentald.tod.ie

Dr Caoimhín MacGiolla Phadraig (Co-supervisor)
Department of Public and Child Health
Dublin Dental University Hospital. Lincoln Place, D2
Ph. +353(01)6127303
Caoimhín.MacGiollaPhadraig@dentald.tod.ie

Dr Kok Ei Chuen (Co-supervisor)
Consultant Grade II (Paediatric Dentistry)
Department of Dental Services
Brunei Darussalam
Ph: +6732380413 ext 178
Eichuen.kok@moh.gov.bn
Risalah Maklumat untuk Peserta Penyelidikan

Perkhidmatan Pergijian berkerlerluan Khas di Brunei Darussalam: Apakah pengalaman professional pergijian dalam pengendalian perkhidmatan?

Biskita telah disempat untuk menyertai penyelidikan mengenai perkhidmatan pergijian bagi pesakit-pesakit yang berkerlerluan khas di Brunei Darussalam. Sebelum biskita membuat keputusan untuk mengambil bahagian, adalah penting untuk biskita memahami mengapa penyelidikan sedang dilakukan dan apa yang akan terlibat.

Sila ambil masa yang secukupnya untuk membaca dan mempertimbangkan dengan teliti penerangan yang diberi sebelum biskita bersetuju untuk menyertai penyelidikan ini. Sekiranya terdapat sebarang maklumat yang tidak jelas, silai hubungi kami untuk maklumat lanjut.

Apakah tujuan kajian ini?

Tujuan kajian ini adalah untuk meneroka bagaimana perkhidmatan pergijian bagi yang berkerlerluan khas diberikan pada masa ini melalui pengalaman profesional pergijian, faktor-faktor yang memfasilitasi/memudahkan perkhidmatan serta halangan/kesukaran yang dialami.

Kenapa saya telah dipilih untuk mengambil bahagian?

Biskita telah dipilih kerana biskita menyediakan perkhidmatan pergijian, sama ada dalam proses pemberian perkhidmatan atau dalam menyediakan rawatan pergijian untuk pesakit-pesakit ini.

Adakah saya perlu mengambil bahagian?

Terserah kepada biskita untuk menentukan sama ada biskita mahu mengambil bahagian atau tidak. Biskita juga bebas untuk menarik diri dari penyelidikan pada bila-bila masa sebelum analisis dilakukan dan tidak perlu memberi alasan untuk ini.

Apa yang terlibat dalam kajian melibatkan?

Sekiranya biskita membuat keputusan untuk mengambil bahagian, biskita akan ditemurahmah oleh penyelidik utama iaitu Dr Hani Ayup secara bersendirian di mana biskita akan diminta untuk membincangkan pengalaman biskita dalam menyediakan rawatan pergijian yang diperlukan. Biskita akan diperintah oleh pengetua untuk memberikan penjelasan, apa yang telah membantu dalam memberikan rawatan, apa masalah yang perlu ditangani dan bagaimana biskita berusaha dengannya.

Temurah lancar mengambil masa kira-kira 1 jam dan boleh ditetapkan pada masa dan tempat yang sesuai untuk biskita. Temurah akan dirakam dan kemudian disalin kepada translir. Salinan translir biskita akan diberikan kepada biskita, jika biskita mahu, untuk mengesahkan bahawa ia mempunyai input biskita dengan tepat.

Adakah penyerahan saya dalam penyelidikan ini dirahsiaikan?

Apakah manfaatnya saya menvertai kajian ini?
Kajian ini mungkin mempunyai manfaat atau langsung tiada memberi apa-apa manfaat kepada biscita
Walaubagaimanapun, penyelidikan ini akan membantu mendapatkan pemahaman yang lebih baik mengenai
perkhidmatan perjiguan untuk orang berkeperluan khas di Negera Brunei Darussalam. Maklumat ini nanti akan
dipunakkan untuk melakukan kajian lanjut dengan tujuan untuk memperbaiki kualiti perkhidmatan secara
berterusan.

Apakah risiko yang dijangka dalam menyertai kajian?
Tiada risiko yang dijangka tetapi kajian memerlukan biscita meluangkan masa untuk ditemuduga seperti yang
dinyatakan di atas.

Siapa yang mengendalikan dan membiayai penyelidikan?
Penyelidik utama ialah Dr. Hani Ayup, seorang pelajar pascasiswazah dalam kursus Pegigian berkeperluan
Khas di Hospital Pergigian Dublin, Ireland. Penyelidik lain adalah Profesor Blánaid Daly dan Dr
Caomhín MacGiolla Phadraig, di mana kedua-duanya berpengalaman dalam penyelidikan bagi orang
berkeperluan khas. Penyelidik berhak untuk menarik balik penyerataan biscita dalam kajian pada bila-bila masa
tanpa persetujuan biscita.
Hospital Pergigian Dublin akan membiayai penyelidikan ini.

Siapa yang memberi kebenaran untuk kajian ini?
Kelulusan etika telah diberikan oleh Jawatankuasa Etika Penyelidikan Fakulti Sains Kesehatan, Kolej
Trinity, Dublin dan Jawatankuasa Penyelidikan dan Penyelidikan Kesihatan dan Etika Brunei.

Siapa yang boleh saya hubungi jika saya mempunyai sebarang aduan?
Sila hubungi Jawatankuasa Penyelidikan dan Etika Perubatan dan Kesihatan Brunei melalui e-mail
mheo@moi.gov.bn jika biscita mempunyai sebarang aduan.

Siapa yang boleh saya hubungi untuk mendapatkan maklumat lanjut?
Maklumat lanjut mengenai kajian ini boleh didapati dari: -
Dr Hani Ayup (Penyelidik Utama)
Department of Public and Child Health
Dublin Dental University Hospital. Lincoln Place, D2
Ph. +353 (01)6127303
Hani.ayup@dental.tcd.ie

Professor Blánaid Daly (Penyelidik)
Department of Public and Child Health
Dublin Dental University Hospital. Lincoln Place, D2
Ph. +353 (01)6127303
Blánaid.daly@dental.tcd.ie

Dr Caomhín MacGiolla Phadraig (Penyelidik)
Department of Public and Child Health
Dublin Dental University Hospital. Lincoln Place, D2
Ph. +353 (01)6127303
Caomhín.MacGiollaPhadraig@dental.tcd.ie

Dr Kok El Chuen (Penyelidik)
Konsultan Gred Grade II (Pergigian Pediatrik)
Jabatan Perkhidmatan Pergigian
Brunei Darussalam
Tel: +6732380413 ext 178
Echuen.kok@moi.gov.bn
Appendix 10 Consent Form

Consent Form

Special Care Dentistry in Brunei Darussalam: What are the experiences of service providers?

Principal Researchers
Dr Hani Ayup, Department of Public and Child Health, Dublin Dental University Hospital. Lincoln Place, D2
Ph: (01)6773383, hani.ayup@dental.tcd.ie

I understand the nature of this study. I understand it will involve a single interview with the primary researcher, which will cover topics relating to my opinions and experiences in provision of dental care for adults with disabilities.

I understand that steps will be carried out to maintain confidentiality. I will be allocated a number that will be used as an identifier only known by me and the principal researcher. I understand that the interview will be recorded and the recordings will be accessible by the principal researcher, her supervisors and translator (if interview conducted in Malay) that I will have access, if desired, to the transcript.

I understand that I have access to the transcripts, if desired. Anonymised transcripts (with all identifiable data removed) will be accessible to the research team and examiners. All recordings and transcripts will be kept in a safe locked cabinet and will only be reviewed by the researcher, supervisors, examiners and translators, where appropriate.

I have read the information leaflet and understand the contents. I have had the opportunity to ask questions about the study and all questions have been answered satisfactorily.

I understand that this research is being carried out as part of a postgraduate doctorate degree and that it will be used for the final thesis, and possibly for future publications. I understand that all information given to the researchers is confidential and that I cannot be identified, although direct quotes may appear in the write up. I understand that data collected will not be used in unrelated studies without further specific permission.

I freely and voluntarily agree to be part of this research study, though without prejudice to my legal and ethical rights. I understand that I may withdraw from the study at any time before analysis process, without effect. I have received a copy of this consent form for my own records.

Participant's Name

Participant's Signature

To be completed by the researcher:
I have explained the nature, purpose, procedures, benefits and risks of the study to the best of my ability. I have offered to answer any questions and fully answered questions when asked. I believe that the participant understands my explanation and has freely given informed consent

Signature Date
Borang Persetujuan Penyertaan

Perkhidmatan Perkhidmatan berkeperluan Khas di Brunei Darussalam: Apakah pengalaman profesional perkhidmatan dalam pengairan dan perkhidmatan perkhidmatan?

Penyelidik Utama
Dr Hani Ayup, Department of Public and Child Health, Dublin Dental University Hospital. Lincoln Place, D2
Ph. (01)6127330, hani.ayup@dentals.tcd.ie

Saya memahami unsur-unsur kajian ini. Saya faham bahawa ia akan melibatkan sesi temu rakan dengan penyelidik utama, yang akan merancang topik yang berkaitan dengan perkhidmatan serta pendapat saya dalam memberikan perkhidmatan perkhidmatan bagi orang-orang yang berkeperluan khas,

Saya faham penyelidikan ini menguupan lanjutan-lanjutan untuk mengukur kerajaan maklumat. Saya akan diperkenalkan nombor yang akan digunakan sebagai pengesahan yang hanya diketahui oleh saya dan penyelidik utama. Saya faham temuan maklumat akan dirakam dan rakaman tersebut dapat diakses oleh penyelidik utama, penyelidik dan penerjemah (jika temuan dijalankan dalam bahasa Melayu) untuk ditranskripkan.

Saya faham bahawa saya mempunyai akses kepada transkrip, jika dikehendaki. Transkrip yang telah diedit untuk melindungi maklumat peribadi peserta akan dapat diakses oleh penyelidik utama, penyelidik-penyelidik yang terlibat, penyelidik dan pemeriksa laporan penyelidikan. Semua rakaman dan transkrip akan disimpan dalam kabinet terkunci yang selamat dan hanya akan disemak oleh penyelidik, penyelidik dan penerjemah, jika sesuai. Semua maklumat yang diberikan kepada penyelidik adalah rahsia dan saya tidak boleh diketahui, walaupun melalui pelatik tenis daripada temuramah.

Saya telah membaik risalah maklumat peserta dan memahami kekandungan ini. Saya juga dibel potong untuk bertanya mengenai kajian ini dan saya berpuas hati dengan jawapan yang diberikan kepada semua soalan saya.

Saya faham bahawa kajian ini sedang dilaksanakan secara sahaja dengan daripada latar doktor asal gaib yang tidak pasti dan laporan yang tidak dapat diakses untuk penyelidikan oleh penyelidik lain.

Saya faham bahwa data yang dikumpulkan tidak akan digunakan dalam kajian yang tidak berkaitan tanda kebenaran khusus. Saya secara sukarela bersetuju untuk meyertai kajian terkini. Saya mengetahui etika dan hak saya. Saya faham bahawa saya boleh menarik diri dari kajian pada bila-bila masa sebelum proses keputusan analisis. Saya telah menerima salinan borang kebenaran ini untuk rekod saya sendiri.

Nama Peserta

Tanda: 

Tanda: 

Tanda: 

Untuk disampaikan oleh penyelidik:

Saya telah menerima sifat, tuntutan, prosedur, tanda dan risiko kajian dengan sebaik mungkin. Saya telah menandatangani untuk menawarkan apa-apa soalan dan menawarkan soalan sebenar apa-apa di dalam. Saya percaya bahawa peserta memahami penjelasan saya dan telah memberikan persetujuan secara sukarela.
Appendix 11 Revised consent form

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**Consent Form**

**Special Care Dentistry in Brunei Darussalam: What are the experiences of service providers?**

**Principal Researchers**  
Dr Hani Ayup, Department of Public and Child Health, Dublin Dental University Hospital. Lincoln Place, D2  
Ph. (01) 6127303, hani.ayup@dental.tcd.ie

---

There are 2 sections in this form. Each section has a statement and asks you to initial if you agree. The end of this form is for the researchers to complete.

Please ask any questions you may have when reading each of the statements.

Thank you for participating.

Please initial the box if you agree with the statement. Please feel free to ask questions if there is something you do not understand.

<table>
<thead>
<tr>
<th>General</th>
<th>Tick box</th>
</tr>
</thead>
<tbody>
<tr>
<td>I confirm I have read and understood the Information Leaflet for the above study. The information has been fully explained to me and I have been able to ask questions, all of which have been answered to my satisfaction.</td>
<td></td>
</tr>
<tr>
<td>I confirm that the research will involve a single interview with the primary researcher, which will cover topics relating to my opinions and experiences in provision of dental care for adults with disabilities.</td>
<td></td>
</tr>
<tr>
<td>I confirm that I understand that steps will be carried out to maintain confidentiality. I will be allocated a number that will be used as an identifier only known by me and the principal researcher.</td>
<td></td>
</tr>
<tr>
<td>I confirm that I understand that the interview will be recorded, and the recordings will be accessible by the principal researcher, her supervisors and translator (if interview conducted in Malay) that I will have access, if desired, to the transcript.</td>
<td></td>
</tr>
<tr>
<td>I agree that these individuals can access my records. I understand that all information will be kept private and confidential and that my name will not be disclosed.</td>
<td></td>
</tr>
<tr>
<td>I understand that I have access to the transcripts, if desired.</td>
<td></td>
</tr>
<tr>
<td>I understand that this research is being carried out as part of a postgraduate doctorate degree and that it will be used for the final thesis, and possibly for future publications.</td>
<td></td>
</tr>
<tr>
<td>I understand that this study is entirely voluntary, and if I decide that I do not want to take part, I can stop taking part in this study at any time before the analysis process without giving a reason. I understand that deciding not to take part will not affect position in the department.</td>
<td></td>
</tr>
<tr>
<td>I understand that I will not be paid for taking part in this study.</td>
<td></td>
</tr>
<tr>
<td>I know how to contact the research team if I need to.</td>
<td></td>
</tr>
<tr>
<td>I agree to take part in this research study having been fully informed of the risks, benefits and alternatives which are set out in full in the information leaflet which I have been provided with.</td>
<td></td>
</tr>
<tr>
<td>I agree to being contacted by researchers by email/phone as part of this research study.</td>
<td></td>
</tr>
</tbody>
</table>
## Data processing & Storage

<table>
<thead>
<tr>
<th>I agree to allow personal information about me to be shared with third parties including, national and international hospitals, and academic research institutions for the purpose of research in provision of dental services, as described in the information leaflet.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anonymised transcripts (with all identifiable data removed) will be accessible to the research team and examiners only.</td>
</tr>
<tr>
<td>All recordings and transcripts will be kept in a password protected laptop and hard copies in a safe locked cabinet and will only be reviewed by the researcher, supervisors, examiners and translators, where appropriate.</td>
</tr>
<tr>
<td>I understand that all information given to the researchers is confidential and that I cannot be identified, although direct quotes may appear in the write up.</td>
</tr>
<tr>
<td>I understand that data collected will not be used in unrelated studies without further specific permission.</td>
</tr>
<tr>
<td>I understand that personal information about me, including the transfer of this personal information about me outside of the EU, will be protected in accordance with the General Data Protection Regulation.</td>
</tr>
<tr>
<td>I understand that there are no direct benefits to me from participating in this study. I understand that results from analysis of my personal information will not be given to me.</td>
</tr>
<tr>
<td>I understand that I can stop taking part in this study at any time before the analysis process without giving a reason. I understand that deciding not to take part will not affect position in the department.</td>
</tr>
</tbody>
</table>

### Participant's Name

### Participant's Signature

---

**To be completed by the researcher:**

I, the undersigned, have taken the time to fully explain to the above patient the nature and purpose of this study in a way that they could understand. I have explained the risks and possible benefits involved. I have invited them to ask questions on any aspect of the study that concerned them.

I have given a copy of the information leaflet and consent form to the participant with contacts of the study team.

<table>
<thead>
<tr>
<th>Researcher name</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Title and qualifications</th>
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</table>

<table>
<thead>
<tr>
<th>Signature</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
</tbody>
</table>
Appendix 12 Invitation to participate

E-mail/Letter of invitation to participate

Dear Colleague,

I am writing to ask if you would help us with some research. We are researching dental services being provided for adult Special Care populations in Brunei Darussalam. You have been sent this e-mail as you provide service for these patients. We hope that this research will provide an insight into current practices in this area, with the end goal of the continued improvement in services and quality for our patients.

I enclose an information leaflet about the study. If, after reading it, you would like to take part, please complete and return a signed copy of the “Agreement to participate” form and either email it back or post it in the envelope provided. It would be very helpful if you could return your participation form within the next 4 weeks. You will then be contacted directly by the main researcher to arrange a time for the research. If you would like more information before deciding to take part in the study please contact Dr Hani Ayup at hani.ayup@dentistry.tcd.ie.

Your participation is entirely voluntary, and your information will be confidential, whether you decide to take part or not. All information supplied will be treated confidentially and only used for this research.

Thank you for your time.

Yours sincerely,

(as Gatekeeper)

Agreement to participate

I, ___________________________, agree to participate in the “Special Care Dentistry in Brunei Darussalam: What are the experiences of service providers?” study and agree to be contacted by the principal researcher, Dr Hani Ayup to schedule an interview via:

1. Email address ___________________________
2. Phone number ___________________________
3. Participant signature and Date ___________________________
E-mel / Surat untuk menyertai penyelesaian

Rakan sekerja yang dihormat,

Bisikta telah ditemui untuk menyertai penyelesaian mengenai perkhidmatan pengobatan bagi pesakit-pesakit yang berkeperluan khas di Brunei Darussalam. Penyelesaian ini diharap akan membantu gambaran mengenai perkhidmatan yang sedang diberikan pada masa ini dan seterusnya bertujuan untuk memperbaiki perkhidmatan secara berterusan dan juga untuk meningkatkan kualiti perkhidmatan bagi golongan pesakit ini.

Bersama ini, saya melampirkan isaan maklumat mengenai penyelesaian ini. Jika bisikta merasa kecewa dengan penjelasan yang diberikan dan bermimpi untuk turut serta, bisikta dikehendaki untuk mengisakan dan menandatangani “Borang Persejukuan” yang dihimpunkan dan menghantarannya kepada sampul yang disediakan ATAU membalas balik emel ini, dalam tempoh masa 4 minggu dari sekarang. Sejukas persejukuan bisikta, bisikta akan dihubungi terus oleh penyelesaian utama (Dr Hani) untuk menetapkan waktu temuramah yang sesuai. Jika bisikta memerlukan sebarang maklumat lanjut sebelum membuat keputusan, sila hubungi Dr Hani Ayup di hani.ayup@dental.tcd.ie.

Penyertaan bisikta adalah secara sukarela, dan sebarang maklumat dalam penyelesaian ini adalah suil, sama ada bisikta memutuskan untuk mengambil bahagian dalam penyelesaian atau sebaliknya. Semua maklumat yang diterima adalah suil dan hanya digunakan untuk kelancaran penyelesaian ini.

Terima kasih.

Yang Benar,

Jabatan Perkhidmatan Pergigian (sebagai “Gatekeeper”)

-----------------------------------------------------------------------------------

Persejukuan Menyertai Penyelesaian

Saya, bersetuju untuk menyertai Kajian “Perkhidmatan Pergigian berkeperluan Khas di Brunei Darussalam: Apakah pengalaman profesional pengobatan dalam pengendalian perkhidmatan?” dan bersetuju dihubungi oleh penyelesaian utama, Dr Hani Ayup untuk menjadui temuramanan maiat,

1. Eme:

   

2. No Telefr:

   

3. Tandatangan dan Tarih

   

   

161
Appendix 13 Google form to denote participant's response
Appendix 14 Topic Guide

Interview Script/Topic guide

Demographics
Identifier Code .............................................
Age ....................................................
Gender ..............................................
Year of Graduation ........................................
Postgraduate qualifications
..........................................................................  

Introduction

My name is Hani. I am currently a postgraduate student in the Trinity College Dublin under Professor Daly and Dr MacGilla Phadraig. This research project is part of my thesis for my doctorate programme. The aim of this study is to explore the dental services provided to adults with disabilities here in Brunei Darussalam. I am interested in your opinions and experiences, and there are no right or wrong answers. I will record the interview today and it will be transcribed.

From today you will be allocated a unique identifier number and your name will no longer be associated with your data. Everything that you say will be kept confidential, however you may be anonymously quoted in the write up. During the interview please feel free to interrupt me or ask me to expand on the question. Before we start do you have any questions?

Are you happy to proceed with the interview, understanding all the information I have just given you? Are you happy that I begin the recording now?

******************************

Experience in providing service to adults with disabilities

Can you share your experience to date in providing care with adults with disabilities?

- How do you feel about providing care?
- How long have you been providing care?
- How often do you provide care?
- What type of disabilities do the adults you treat have?
- What types of dental treatment have you provided?
- How do you feel about the standard of care provided at the moment?
- Do you feel you have adequate support in providing Special Care Dentistry?

For Managers:

- Is there any policies or standards of procedures guiding Special Care Dentistry?
- What support do you provide for your staff in providing Special Care dentistry?
- In your opinion, what factors are needed to be considered in facilitating care?

Barriers in provision of care
How do you feel about the challenges you faced on providing care?
Do you have any examples of cases/challenges that you found particularly challenging?
How do you think we could overcome this challenge?
What do you think is the most important factors in overcoming these barriers to care?

**Facilitators in provision of care**
Can you share what has contributed to the success of your care?
What factors have you come across and how did you overcome this?
What do you think are the most important factors for the success in providing care for these patients?
How do you believe successful care could be measured?

**Concluding Remarks**
Thank-you for your time and valuable insight - is there any thoughts you would like to add before we finish? Please be reassured of the confidentiality of all the information you have provided.
Please contact me if you think of any queries. Once the data has been analysed I will send you a summary sheet so you can be aware of the results.
I would like to thank you again for your time and help in this research.
Skrip Temuramah/Panduan

Demografi
Kod pengenal
Umur
Jantina
Tahun Tamat Pengajian
Kelayakan pascaisiswazah

Pengenalan

Mulai hari ini, bisita akan dipertimbangkan nombor identiti unik dan nama bisita tidak lagi dapat dikaitkan dengan data bisita. Segala maklumat yang diterima adalah rahsia namun pelikan langsung terus bisita mungkin akan digunakan sebagai rujukan penulis/penerbit.

Jika seiringa soalan yang diajukan itu tidak dipahami, bisita pada bila-bila masa boleh untuk memberhentikan saya semasa temuramah berlangsung untuk menanyakan soalan atau meminta penerangan yang lebih jelas. Sebelum kita memulakan, adakah anda mempunyai sebarang soalan? Adakah bisita berpuas hati dengan proses temuramah, memahami semua maklumat yang saya berikan? Adakah bisita setuju untuk saya memulakan rakaman sekarang?

Pengalaman dalam menyediakan perkhidmatan
Bolehkah anda berkongsi pengalaman bisita sehingga kini dalam memberi perkhidmatan kepada orang dewasa yang berkeperluan khas?
Bagaimana perasaan anda tentang memberi perkhidmatan ini?
Berapa lama anda telah memberi perkhidmatan ini?
Berapa kerapakah anda memberi perkhidmatan ini?
Apakah jenis-jenis keikutsertaan orang yang perlukan khas yang telah bisita rawat?
Apakah jenis rawatan pergian yang bisita berikan?
Bagaimana perasaan bisita tentang tahap/standard penjagaan yang disediakan pada masa ini?
Adakah bisita merasa bisita mendapat sokongan yang menokupi dalam menyediakan perkhidmatan
Pergian bagi yang berkeperluan khas?
Untuk peserta yang terlibat dalam pengurusan/ketua unit:
Adakah terdapat sebarang dasar atau manual prosedur kerja yang memberi panduan dalam
perkhidmatan Pergigian bagi orang bekerupert Khas?
Apakah dorongan atau sokongan yang biskita berikan kepada kakitangan biskita dalam menyediakan
perkhidmatan pergigian bagi orang bekerupert Khas?
Pada pendapat anda, apakan faktor-faktor yang perlu dipertimbangkan dalam memudahkan
perkhidmatan Pergigian bagi orang bekerupert Khas?

Cabaran dalam perkhidmatan
Mengikut pendapat biskita, apakah cabaran yang biskita hadapi dalam memberi/menjalani perkhidmatan
pergigian bagi orang bekerupert Khas?
Adakah biskita mempunyai contoh-contoh kes yang biskita dapat amat mencabar?
Bagaimanakah biskita dapat mengatasi cabaran ini?
Faktor apa yang biskita rasa faktor yang paling penting dalam mengatasi halangan ini?

Fasilitator dalam perkhidmatan
Bolehkah biskita kongsikan apa yang telah menyumbang kepada kejayaan dalam memberikan
perkhidmatan biskita?
Apa faktor-faktor yang biskita telah alami dalam memberikan perkhidmatan dan bagaimanakah cara
biskita mengatasi nya?
Apa yang biskita fikir adalah faktor yang paling penting untuk kejayaan dalam memberi penjajaan
kepada pesakit-pesakit ini?
Mengikut pendapat biskita, bagaimanakah kejayaan perkhidmatan biskita dapat diukur?

Penutup
Terima kasih untuk pendapat biskita di dalam temuramah ini - adakah yang biskita ingin tambahkan sebelum
selesai? Saya juga ingin mengingati biskita bahawa semua keterangan yang biskita berikan pada hari ini
adalah sulit.
Jika biskita terdapat sebarang pertanyaan, sila hubungi saya. Sebaik sahaja data telah dianalisis saya akan
menghantar ringkasan supaya biskita dapat mengetahui hasilnya.
Diatas masa yang biskita luangkan dan juga bantuan biskita dalam menjayakan penyelidikan ini, saya ucapkan
Terima kasih.
Appendix 15 Revised Topic Guide

Appendix IV
Interview Script/Topic guide

Demographics
Identifier Code
Age
Gender
Year of Graduation

Place of BDS training
Postgraduate qualifications

Length of service

Introduction
My name is Hani. I am currently a postgraduate student in the Trinity College Dublin under Professor Daly and Dr MacGioilla Phadraig. This research project is part of my thesis for my doctorate programme. The aim of this study is to explore the dental services provided to adults with disabilities here in Brunei Darussalam. I am interested in your opinions and experiences, and there are no right or wrong answers. I will record the interview today and it will be transcribed.

From today you will be allocated a unique identifier number and your name will no longer be associated with your data. Everything that you say will be kept confidential, however you may be anonymously quoted in the write up. During the interview please feel free to interrupt me or ask me to expand on the question. Before we start do you have any questions?

Are you happy to process with the interview, understanding all the information I have just given you? Are you happy that I begin the recording now?

Definition of Special Care Dentistry
Can you share on what you understand when we say Special Care Dentistry?
How does these group of patients mentioned access dental care in your clinic?

Experience in providing service to adults with disabilities
What are your patient load like? What patients do you usually see?
Can you share your experience to date in providing care with adults with disabilities?
Scenario 1: On Saturday afternoon, if there was a patient who is a wheelchair user complaining of pain – what usually happens? How do they go about in being seen?

Scenario 2: On Thursday afternoon, a lady presented in your clinic explaining that her daughter who has intellectual disability fell down earlier today and seems to be in pain – what usually happens then?

How do you feel about providing care?
How long have you been providing care?
How often do you provide care?
What type of disabilities do the adults you treat have?
What dental treatment would you or your colleagues would have provided?
How do you feel about the standard of care provided at the moment?
Do you feel you have adequate support in providing care?

For Managers:
Is there any policies or standards of procedures guiding Special Care Dentistry?
What support do you provide are currently available for your staff in providing Special Care dentistry?
In your opinion, what factors are needed to be considered in facilitating care?

Barriers in provision of care

With the scenarios presented, what How do you feel about the challenges would you face on providing care?
Do you have any examples of other cases/challenges that you found particularly challenging?
How do you think we could overcome this challenge?
What do you think is the most important factors in overcoming these barriers to care?

Facilitators in provision of care

Have you managed any similar cases successfully? Can you share what has contributed to the success of your care?
What factors have you come across and how did you overcome this?
What do you think are the most important factors for the success in providing care for these patients? How do you believe successful care could be measured?

**Concluding Remarks**
Thank-you for your time and valuable insight - is there any thoughts you would like to add before we finish? Please be reassured of the confidentiality of all the information you have provided. Please contact me if you think of any queries. Once the data has been analysed I will send you a summary sheet so you can be aware of the results. I would like to thank you again for your time and help in this research.
## Appendix 16 Standards for Reporting Qualitative Research (SRQR)
(O’Brien et al., 2014)

<table>
<thead>
<tr>
<th>NO</th>
<th>Topic</th>
<th>Item</th>
<th>Section within thesis / Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Title</td>
<td>Title</td>
<td>Concise description of the nature and topic of the study Identifying the study as qualitative or indicating the approach (e.g., ethnography, grounded theory) or data collection methods (e.g., interview, focus group) is recommended. The title of the study is “Special Care Dentistry in Brunei Darussalam: What are the experiences of service providers? – A qualitative study.” The title describes the topic concisely and indicates clearly that it is a qualitative study among dental service providers in Brunei.</td>
</tr>
<tr>
<td>S1</td>
<td>Abstract</td>
<td>Abstract</td>
<td>Summary of key elements of the study using the abstract format of the intended publication; typically includes background, purpose, methods, results, and conclusions. Summary including aims, methods, results and conclusion are available page III.</td>
</tr>
<tr>
<td></td>
<td>Introduction</td>
<td>Problem formulation</td>
<td>Description and significance of the problem/phenomenon studied; review of relevant theory and empirical work; problem statement. Section 1 includes a background of the topic and Section 3.8 discussed the paucity of existing literature on the research topic. (pg. 1, 37)</td>
</tr>
<tr>
<td>S3</td>
<td>Purpose or research question</td>
<td>Purpose or research question</td>
<td>Purpose of the study and specific objectives or questions. Section 3.10 states the aims and objectives of the study (pg. 39)</td>
</tr>
<tr>
<td></td>
<td>Methods</td>
<td>Qualitative approach and research paradigm</td>
<td>Qualitative approach (e.g., ethnography, grounded theory, case study, phenomenology, narrative research) and guiding theory if appropriate; identifying the research paradigm (e.g., postpositivist, constructivist/interpretivist) is also recommended; rationale. The study used was a descriptive qualitative design, with constructivist epistemology paradigm and a discussion of the rationale for this study was stated in Section 4.1 (pp. 40).</td>
</tr>
<tr>
<td>S5</td>
<td>Researcher characteristics</td>
<td>Researcher characteristics and reflexivity</td>
<td>Researchers’ characteristics that may influence the research, including personal attributes, qualifications/experience, relationship with. Research characteristics was stated in Section 4.12 (pp.52). Considerations taken to limit bias by practicing rigor and from research reflexivity throughout the study was discussed in</td>
</tr>
<tr>
<td>S7</td>
<td>Context</td>
<td>Setting/site and salient contextual factors; rationale\textsuperscript{b}</td>
<td>The setting of the study was described in Section 4.2 (pp. 41)</td>
</tr>
<tr>
<td>S8</td>
<td>Sampling strategy</td>
<td>How and why research participants, documents, or events were selected; criteria for deciding when no further sampling was necessary (e.g., sampling saturation); rationale\textsuperscript{b}</td>
<td>Section 4.2 and 4.3 explained the rationale behind utilizing purposive and snowball sampling strategy, provides a clear definition and explanation of this sampling strategy and points out the participant's characteristics that accounted for the criteria of selection. (pp. 41 - 44) Section 4.3.1 indicated conceptual density and data saturation approach determined the sample size was determined (pp. 44) Section 4.4 stated the inclusion and exclusion criteria. (pg. 44) Section 4.6 explained the identification, the approach and the recruitment of participants (pg.46)</td>
</tr>
<tr>
<td>S9</td>
<td>Ethical issues pertaining to human subjects</td>
<td>Documentation of approval by an appropriate ethics review board and participant consent, or explanation for lack thereof; other confidentiality and data security issues</td>
<td>Section 4.5 documents the ethical approval obtained for this study. (pg.44). The ethical approval letters were included in Appendix 7 and 8.</td>
</tr>
<tr>
<td>S10</td>
<td>Data collection methods</td>
<td>Types of data collected; details of data collection procedures including (as appropriate) start and stop dates of data collection and analysis, iterative process, triangulation of sources/methods, and modification</td>
<td>Section 4.7 discussed the justification for using individual interviews and not focus groups (pp.47) and the sub-sections within Section 4.7 described the use of topic guide and piloting interviews (Section 4.7.1), the setting (Section 4.7.2) and the interview stages (pp. 47-49) Details of the conduct of data collection can be found in Section 5.1 – 5.3 (pp. 56-64), and</td>
</tr>
</tbody>
</table>
of procedures in response to evolving study findings; rationale included the process of recruitment, interview settings and the conduct of interviews. The iterative process of data collection and analysis in both phases of data collection was also described in this section.

| S11 | Data collection instruments and technologies | Description of instruments (e.g., interview guides, questionnaires) and devices (e.g., audio recorders) used for data collection; if/how the instrument(s) changed over the course of the study | Sections 4.7 provided a detailed account of data collection instruments including use of topic guide, piloting and editions to the topic guide, and use of recording device (pp. 47-52)

Initial topic guide and revised topic guide were included in Appendix 14 and 15. |

| S12 | Units of study | Number and relevant characteristics of participants, documents, or events included in the study; level of participation (could be reported in results) | Section 5.4 detailed the numbers and demographic characteristics of participants. (pp. 65).

Appendix 17 provided mini case studies to illustrate the diversity of sample. (pp.175) |

| S13 | Data processing | Methods for processing data prior to and during analysis, including transcription, data entry, data management and security, verification of data integrity, data coding, and anonymization/de-identification of excerpts | Section 4.9 provided details of transcription process (pp. 47) described data transcription (pp. 48g. 34).

Section 4.5.2 provided the details of data management and storage under Confidentiality (pp 45) |

| S14 | Data analysis | Process by which inferences, themes, etc., were identified and developed, including the researchers involved in data analysis; usually references a specific paradigm or approach; rationale | Section 4.10 detailed the data analysis approach with reference to the thematic analysis approach applied. (pg. 51-52) |

| S15 | Techniques to enhance trustworthiness | Techniques to enhance trustworthiness and credibility of data analysis (e.g., member checking, audit trail, triangulation); rationale | Section 4.13 detailed approaches to ensure rigor and trustworthiness of the study (pp. 53).

Section 4.12 outlines the researcher training in qualitative research conduct. (pg. 52) |
### Results/findings

| S16 | Synthesis and interpretation | Main findings (e.g., interpretations, inferences, and themes); might include development of a theory or model, or integration with prior research or theory | Main findings were explored in Sections 5.5, 5.6, 5.7 and 5.8. Four themes were identified; the workforce of SCD, the current provision of SCD and the facilitators and barriers to SCD (pp. 66-115). |
| S17 | Links to empirical data | Evidence (e.g., quotes, field notes, text excerpts, photographs) to substantiate analytic findings | Quotes were used throughout reporting the results to support analysis |

### Discussion

| S18 | Integration with prior work, implications, transferability, and contribution(s) to the field | Short summary of main findings: explanation of how findings and conclusions connect to, support, elaborate on, or challenge conclusions of earlier scholarship; discussion of scope of application/generalizability; identification of unique contribution(s) to scholarship in a discipline or field | Summaries of findings were found in subsections of results section and an overview of findings (Section 6.1) were discussed in reference to the aims and objectives of the study and were (pp. 116-121) The generalisability of the findings was discussed under Section 6.2 (pp. 122-126) |
| S19 | Limitations | Trustworthiness and limitations of findings | Trustworthiness and limitations of the study was discussed in Section 6.3 (pp. 129) |

### Other

| S20 | Conflicts of interest | Potential sources of influence or perceived influence on study conduct and conclusions; how these were managed | Potential sources of conflict were discussed in Section 4.5 under Ethics approval (pp. 44) |
| S21 | Funding | Sources of funding and other support; role of funders in data collection, interpretation, and reporting | No influence of DDUH funding the study on the study process. |
Appendix 17 Participant Case studies

This next section will present some mini case studies to illustrate the diversity and experience of different sectors of the dental workforce recruited. The names and identifying details used in this section have been changed to protect the privacy of individuals.

**Dentist 1: Newly qualified Clinician - Less than two year of working experience, limited experience of SCD during undergraduate training.**

Dentist 1 (D1) was a primary care dental officer who had just joined the service in the last five months. D1 was based in the primary care clinic in the National Dental Centre, which is the usual initial placement for new graduates. D1 had some education in special care from his undergraduate training - “I think it was, special care dentistry was introduced in 4th year [of undergraduate training] so we had a few lectures on inhalation, intravenous, different types of patients needing special care dentistry”. D1 was confident in managing moderately dentally anxious patients as D1 had hands-on experience during undergraduate training. This included application of behaviour support such as distraction, graded exposure and progressive muscle relaxation to allow patient's acceptance of dental treatment. These behavioural support terms were those used by D1 and felt that practising these techniques in Brunei are difficult due to time constraints - *in the morning outpatient [clinics]… you just have to do the techniques which doesn't take a while, like diaphragmatic breathing and distraction, whereas, graded exposure and then, progressive muscular relaxation, takes a longer time.*

D1 was one of the graduates to be in the one year dental foundation training programme which was introduced in 2019. This training is similar to a vocational training programme. It aimed to provide a protected practicing environment over three years for the returning new graduates to consolidate their existing skills and
knowledge from undergraduate training to hands on clinical practice in ‘real time’. Graduates were assigned with a senior clinician as their mentor and support in their day-to-day clinical practice. Previously, this ‘mentorship’ was available to new graduates informally but there were no formal assessments, progress reviews or tutorials undertaken. D1 found this programme valuable when encountered patients who were medically compromised, for example a patient who required extractions post-radiotherapy, whom D1 was not confident in managing - "It did help me, cause I had a supervisor, but if I was alone in the clinic, I would have just referred to a, someone more suitable in terms of planning treatment.” Through guidance and advice by D1’s clinical mentor, D1 was able to provide the appropriate care for these patients. Despite this, D1 felt treating patients who were medically compromised were beyond D1’s scope of practice as a primary care dentist - “It felt like, it wasn’t within my scope [of practice]. Even though I’ve had training, but I feel like I didn’t really have enough training back in [undergraduate years] cause most of the patients are like.... Just me observing and then that’s it”. D1 advocated the importance of support and mentorship. D1’s view of SCD was an individual with medically compromising conditions and who is dentally anxious. D1 was silent on intellectual disability or frail older people.

**Dentist 2 (D2) - Newly qualified Clinician with some experience in SCD in primary care setting - Less than two years of working experience, limited experience during undergraduate training**

D2 was a primary care dental officer who graduated about two years ago and had no experience during D2’s undergraduate training – “I never encountered patients, special care patients, back in my uni[versity] days...To be honest, it’s just a series of few lectures about special care and how would you treat them and what kind of,. what is deemed to be a special care patient”. D2 worked in a peripheral primary care dental clinic on return to Brunei where D2 gained experience in encountering PSCN,
including patients with intellectual disability, patients who were medically compromised, patients who used wheelchairs and children with autism. D2 had a positive attitude towards treating PSCN in primary care - "I think the good thing about being in Primary Oral Care, you get to see patients even though you think they should be seen by a specialist. Because we are the first liners. You get to see, you get to kind of choose if you can manage this patient because I think for me, it's all about you try first, if you really cannot do it, if you really cannot manage then you pass it on especially [to] someone who is a bit more experienced." D2’s successful experience in treating PSCN stemmed from D2’s 1) making adjustments in care – “a little more TLC - tender, love and care”, 2) using patient-centred approaches “by right, the tooth probably is better off extracted... But yeah definitely, in terms of decision making, it’s not you who is [telling them] the decision, you’re just telling options and give them what they want” and 3) the support provided by D2’s more experienced colleagues which made D2 feel confident in provision of dental care.

In contrast to D1, D2’s two year experience in primary oral care made D2 familiar with SCD and as the front liner, D2 balanced inexperience in the clientele against the need to provide care as D2 acknowledged her role as the only provider in the clinic. D2 was braver about doing treatment her/himself, though again acknowledges the importance of mentoring from the seniors.

The setup of provision of primary care services in peripheral dental clinics were slightly different to the NDC where patients under 17 years of age deemed beyond the scope of a New Zealand dental nurse (equivalent to dental therapist, see Table 5 for scope of practice) were referred to dentists for management and treatment. Uncooperative patients, particularly children with autism were the groups of patients’ D2 had encountered and struggled to manage. However, the presence of a paediatric specialist and their clear referral pathways, allowed D2 the ease of
procuring expertise opinion via a phone call and D2 reported it as enabling seamless management for child patients – “I just wrote a letter and called the [paediatric] specialist, saying that I got this really difficult child patient, I couldn't manage, and mom is being worried obviously, wishes to be seen as soon as possible. [The specialist] saw the patient within the same week”. In contrast, the lack of expertise and guidelines in the management of adults /PSCN complicates the care for PSCN – “adults who need for example simple fillings, I don’t think it’s worth it for them to actually refer them to Pros or anybody, because I think for example it’s just a simple filling but then it’s not so much of the treatment that’s difficult. It's the patient, who are not able to do what you need to do. I honestly do not know how I would go about if that happens in my chair.”

**Dentist 3 (D3) - More experienced Clinician (less than three years of work experience) with limited experience of SCD in primary care setting**

D3 was a primary care dental officer who graduated approximately three years ago from New Zealand. Despite D3 working in two different peripheral primary care dental clinics, D3 had very limited experience in encountering PSCN during the past three years working in a primary care setting - *I have seen a number of patients with special needs but not much. I have only seen maybe two patients [who has special needs]. So far I have not encountered that experience, usually my senior manages [treat them].* D3’S experience in special care were limited to seeing a patient with intellectual disability. D3 found their management so difficult and uncomfortable and reported that D3 would try and evade and seeing these patients, including depriving them of continuity of care - “you try to avoid, like, I try to. No, I don't want to do it, right? so I guess, yeah that’s why I said, 'come again, morning [as outpatient]’ so you don’t give appointments in the afternoon.” D3 also stated that if D3 had to see these patients, D3 would refer to her senior, and if they were unavailable, D3 would refer to specialists who could manage the patient.
Similarly, D3 also expressed difficulty in managing patients who D3 described as medically compromised, giving the example of patients on bisphosphonates and patients on warfarin who required extractions (most of whom can be managed in primary dental care following SCDEP (2015) guidelines for example). For this group of patients, D3 reported D3’s preference to refer to specialists in oral surgery.

D3 had more work experience than D1 and D2 described above, but D3 was more worried about treating this group and so sought ways to avoid doing so. Hence, D3 did not develop the skills and relevant experience and so continued to avoid managing these groups. For D3, mentoring appears to be something that has to be provided in a structured way and D3 will not seek it out independently. This suggests that for some clinicians a formal mentoring programme where exposure to PSCN is required as part of the experience.

**Dentist 4 (D4) - More experienced Clinician (less than five years of work experience) with some experience in SCD during undergraduate training and more experience during working (both in primary care setting and as BST)**

D4 was a primary care dentist who joined the dental services less than five years previously and was currently undergoing Basic Specialty Training (BST) after working in a peripheral primary care dental clinic for two years. BST is a structured programme which consists of weekly lectures and three years of clinical rotation in all specialties available in Brunei. Upon completion, trainees are encouraged to acquire an internationally recognized qualification, for example Membership in the Faculty of Dental Surgery.

D4 had experience in SCD during D4’s undergraduate in New Zealand where D4 chose to attend placements providing SCD, for example for patients with dementia. This knowledge and experience provided a foundation for D4 to treat patients with special care needs in a primary care setting. With more practice, D4 found it easier
to manage care and gained more confidence - *I think I gained more confidence once I actually started treating them. But seeing those patients and seeing how they treat them [in undergraduate], doesn't actually make me more confident, just more manageable, and maybe know how to deal with them more. But confidence actually comes from when I actually treat them myself in OP [Outpatients clinic].* D4 further strengthened their experience in treating patients with special care while D4 was undergoing BST rotations, more specifically during their rotation in paediatric dentistry and oral surgery. D4 recognised that PSCN needed more care than the average patients seen in primary care. D4 was very passionate about providing holistic approach in their care, removing barriers to dental care by giving appointments, improving access through continuity of care, providing advice and treatment catered to each individual. D4 expressed the need to refer patients to specialists if attempted treatment on the dental chair was unsuccessful - *if the patient is uncooperative, only then [do] I refer. So uncooperative in a way, it’s easier for them [the team to whom she refers] to consider the treatment plan and management all in one go under GA, so that’s also one of the reasons I refer to OS [Oral Surgery].* D4’s attitudes towards providing treatment for patients with special care in a primary care setting was positive. However, D4 expressed the need for the expertise or a specialist in this area for when management was unsuccessful - *if I cannot handle myself, I would offer [to the patient or their carer] that there is actually a, maybe they would be better off being seen by a properly trained specialist, that we have that kind of services, so patients were not discouraged to come back. I think that they would be more motivated if they hear that there is actually a special care division [available].*
Dentist 5 (D5) - More experienced Clinician (less than ten years of work experience), completed BST training – Has experience in SCD in primary care and BST

D5 was a primary care dental officer who graduated just over five years ago from UK and has now completed BST training. D5 has been working in numerous peripheral primary care dental clinics and has encountered PSCN very early - I am getting all these [SCD] patients. I had a lot of colleagues at that time that did not have these patients and I was getting them one after the other [in OP] and accepting their role as a service provider, D5 learned very quickly adapted on how best to deal with them – You’d gain experience dealing with them however you’ve been taught to deal with them. Even if you haven’t been fully trained or comfortable with it, you still do it because that’s your job.

During D5’s training, there was no mentorship program in place, whether formal or informal and clinical support was largely dependent on who your senior colleagues were and if they were willing to help. D5 described providing care for these PSCN as “sort of like in a war, in a way. Mixed feelings, part of me was like I’m glad I survived, I did it. [It’s like] you’re given sort of like a simulation, you do it, you learn. So in that sense, I was pleased that I went through it based on whatever training I was given before, little as it was but you just do it. Then after that, the other part of me was going why isn’t there anybody here to protect us? I could have been seriously, severely injured.” D5 exclaimed that training and experience was very much guided on their own and there was no specialist support available for management of these patients - “Nothing has actually been put in place. The only thing that has been put in place is that we’ve had the Paediatric Department to fall on that they were the ones primarily seeing Paediatric patients plus these patients because it overlaps with Special Needs. So, we could call upon them for support, a
little bit of support and like opinion. In terms of the full support, nothing’s really been put in place.”

Having completed BST training, D5 has been back in the primary care as a senior clinician and was now a mentor to new graduates – “So I think actually having that experience would benefit those that are coming after they might not be so I mean they’ll deal with it, like how we’ve always been dealing with it. But having that would make them more comfortable and less resistance in dealing with these patients”.

Dental Nurse 1(DN1) - Experienced clinician – Paediatric Dental Nurse with nearly thirty years of work experience and specialises in working with children with special needs for nearly ten years

DN1 was a dental nurse who has working in the DDS for nearly thirty years and on acquiring post basic training in paediatric dental nursing, DN1 has been working with children with special needs for over ten years. She was one of the five dental nurses who provides dental care for children with special needs in Brunei.

DN1’s interest in special care stemmed from having a child with special needs. DN1’s experience as a mother allowed DN1 to engage with parents of DN1’s patients and allowed DN1 to share experiences with them to help them. She believes that children with special needs are gifts from Allah for their parents and their care for their child will bring them to heaven in the hereafter - We have to take it positively. So, we are the chosen parents. We have been chosen by Allah Ta’ala. We should be thankful because we are chosen because among our family members, there’s already one written down in heaven. So, in between sincerity, sincerity in taking care of the child. So, if we are sincere in taking care of the child, take it like it’s a bonus. So this child will help us later in the hereafter. They will bring us there.
These perspectives were also extended towards DN1’s views in provision of dental care for these patients – “When you are taking care of these children, Allah Ta’ala will give sustenance in life” and DN1 believes their work were as a way to gain Allah’s blessings. Often, DN1 would be working beyond DN1’s scope of work in that DN1 will see patients beyond the age of seventeen as DN1 knows the effects that could happen if preventive care was not provided – “Like those patient whom we have seen ever since they were little to when they are grown-ups like above eighteen… it’s pitiful. There was one time before when I asked the doctor what to do about this? The doctor then said as long as we can cope and the patient is cooperative, we can just carry on. Like the OHI right. Like if it’s just left like that, it’s such a pity right. The parents usually call us too. They will ask when’s the next appointment for their kids. So, they are so used to us already. For those who are above the age limit and we can still cope, we review them once a year. Twice a year like that”.

DN1’s views and perspectives as well as actions reflected the role of Islam in Brunei’s outlook towards the care of vulnerable groups. People needing special care were viewed as valued members within the society and providing care for them was a way to gain goodwill from Allah. Use of DN’s skills and knowledge coupled with the Islamic practices such as daily prayer recitals and words from the Quran were believed to ease the provision of care for these patients.

Specialist 1 (S1) - Experienced Clinician – Specialist Paediatric Dentist over twenty years of work experience and specialises in working children with special need for nearly ten years

S1 was a specialist in Paediatric Dentistry working in the main hospital RIPAS. S1 has over twenty years of experience and has worked in Brunei for nearly fifteen years. S1 was one of the initial specialists who has during the development of
paediatric unit and was involved in the special care programmes pioneered by the paediatric dental nurses in 2009. These programmes created pathways for parents and the patients with special needs to access dental care.

In RIPAS hospital, adult patients with special care referred to RIPAS were initially seen in Oral surgery unit in RIPAS hospital as a result of lack of specialists in SCD in Brunei. However, adult patients screened within the Special care centres or special educations unit whom required restorative treatment created a dilemma as these patients were not accepted by the oral surgeons — “routine fillings they don’t see. Their patients are for surgery only, impacted teeth”. As a result, S1 was obliged to see these patients, complete their treatment and either refer them to Oral Surgery or retain them in the care of paediatric unit for prevention.

Despite having no issues in providing care for these patients, S1 feels a specialist in special care was a much needed speciality in Brunei.

**Specialist 2 (S2) - Experienced Clinician – Specialist Oral Surgeon – over fifteen years of working experience**

S2 was a specialist oral surgeon based in the main hospital RIPAS. S2 has had over fifteen years of experience and has noted that the number of PSCN has increased over the years – “from the rehabilitation unit being set up, things started to pick up from then… the geriatric unit, mostly from the medical side. There are more referrals now”. Despite S2’s experience, S2 still gets nervous in treating PSCN, particularly those with intellectual disability - *Irrespective of the number of special care patients you see. The next referral to you like, “oh no! More special care.” Like you are never confident to do it. I will pray a lot, pray that the patient does not have a difficult behaviour*. These daily prayers practiced accentuates the role of prayers in Islam in everyday routine, in this instance, to ease management of these patients.
S2 has no reservations about treating these patients under general anaesthetic and stated that “we do whatever treatment has to be done. To make that patient deemed dentally fit. So, if there’s an any teeth of poor prognosis that needs to be extracted, we extract. Usually, we do scaling and then any teeth that can be restored, we restore. It will be us (doing the treatment). So, it takes a very long time for us to do. So, like when we do an examination it takes an hour, quite long. Unless you know with extractions you know, straightforward for us. if it’s a lot of restoration is slow for us because it’s not something that we used to on a daily basis” This shows that oral surgeons go beyond their usual scope of practice to provide for their patient’s best dental care, including considering the provision of root canal treatment under general anaesthesia. This highlighted their role in fulfilling the dental needs of patients with special care need that was otherwise unmet in the primary care setting.

Furthermore, S2 also emphasized how oral care and prevention was paramount to care before treatment under general anaesthetic was provided. Often, this oral care advise was carried out by herself or her team. – “[Providing oral care advice] before GA, they at least, you know that both the carers know how to look after oral health, or the patient knows how to brush themselves.

**Specialist 3 (S3) - Experienced Clinician – Specialist Oral Surgeon – nearly thirty years of working experience, experienced as clinical manager**

S3 was a specialist in oral surgery and has been in service for nearly twenty years in Brunei. S3 recalled all patients requiring general anaesthetic (GA) were being referred to and were seen by oral surgeons about twenty years ago as there were no other specialist dental services treating them. This included all children and adults, regardless of whether they are special care or not. GA services were provided once a week then and at least one of the five cases would include a “child with special needs – autistic, hyperactive and syndromic children”. Most of the
referrals for PSCN were from the primary care services whom S3 believed were referred because they required management under GA. *It’s not that they [Primary care] cannot manage them, you see, just that they don’t have GA facilities. So they [patients] need to be managed in the hospital [by the oral surgeons].*

Once the first trained paediatric specialist came back in 2005, dental care for children including those requiring GA were taken over by the paediatric specialist. This reduced oral surgery workload significantly, but adult patients referred from primary care continued to have care under GA solely provided by oral surgeons. However, when the paediatric specialists introduced their special care programmes in 2006 which involved oral health promotion and screening in special needs centres and schools for both adults and children, it generated a huge number of referrals of adult patients requiring elective dental treatment to oral surgery unit.

S3 expressed his concerns about the ethics regarding raising awareness and identification of treatment need amongst this group and their carers without the availability of services to meet the demand — “as far as we were concerned, if there’s an emergency, let them come to us. We will manage. We cannot be going and putting screening and taking on these people, we don’t have the resources”. Even though he shares the same views as S2 in providing ‘comprehensive care’ for these patients, S3 felt that the oral surgery unit were not equipped with the necessary skills and expertise or the manpower to meet the treatment needs and expectations in provision of dental care, especially restorative dental treatment.