

## **Physiotherapy services at Divine Word University physiotherapy research and rehabilitation centre**

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### **Abstract**

This article reports on a retrospective observational study that aimed to describe the physiotherapy outpatient services offered at the Divine Word University Physiotherapy Research and Rehabilitation Centre. The physiotherapy patient records were retrieved between June 2010 and June 2012 and used as data. The key information such as demographic information, presenting complaints and treatment were identified from the records for audit. Patients, physiotherapy staff and students were interviewed to explore their perceptions of the services offered at the centre. A total of 241 patient records were reviewed; 66% of patients presented with musculoskeletal complaints. More than 50% of the patients were from the university main campus. The interviews identified that the department needs to strengthen the referral system and awareness among the communities and the health care system to increase patient accessibility.

### **Introduction**

Physiotherapy provides services to individuals and aims to develop, maintain and restore maximum movement and functional ability throughout life. This includes providing services in circumstances where movement and function are threatened by ageing, injury, pain, diseases, disorders, conditions or environmental factors (World Confederation for Physical Therapy [WCPT], 2011).

The physiotherapy education program was established in Papua New Guinea (PNG) in 2003 at Divine Word University (DWU), Madang. This program was initiated by Callan services with the assistance of Christoffel-Bilndenmission (CBM), Cordaid, Volunteer Service Overseas (VSO), National Department of Health (NDoH) and DWU.

The physiotherapy training at DWU primarily focuses on prevention and intervention in cases of disability (Powell, 2001), and rehabilitation services in the hospital and communities. DWU is responding to the demand for physiotherapy professionals in the health system by enrolling more students in the Physiotherapy Department. The strategic vision of the university is aimed at meeting national needs and international standards. The Physiotherapy program was reviewed and the diploma program was eventually upgraded to degree (four years of study) in 2008 with the support of the stakeholders. In 2013 this program has completed its first decade of education and it has produced five cohorts of graduates.

The classroom based teaching conducted in the university allowed the students to gain theoretical knowledge. The students gained clinical knowledge by clinical placements in various provincial hospitals throughout the country where students were supervised by the physiotherapists. However, to fill the gap between the theoretical and practical skills and to improve the quality of teaching and learning in the university campus an in-house clinical setting was initiated. After negotiations, Cordaid, one of the partner organisations, approved an extended funding grant to design a clinical setup; hence the DWU Physiotherapy centre was established in 2010.

The Divine Word University Physiotherapy Research and Rehabilitation Centre (DWUPRRC) is equipped with highly technical and efficient therapeutic equipment including electrophysical agents such as ultrasound, shortwave diathermy, interferential currents, muscle stimulators, transcutaneous electrical nerve stimulators, laser, hydro collateral pack, ice packs and exercise therapy units consisting of hand therapy units, orthotic and prosthetic devices, quadriceps stool, continuous passive movement unit, standing and tilting frames, paediatric standing frames, electronic and manual manipulation plinths, wedges, bolsters, peg boards and other anatomical posters and models.

Like other universities and physiotherapy colleges DWUPRRC offered physiotherapy outpatient services as part of training. The physiotherapy outpatient services were offered to the patients with neuromusculoskeletal impairments which can be diagnosed and treated without hospitalization (Hart & Wright, 2002; Deutscher et al., 2009). The patients at the DWUPRRC were managed by the team of qualified expatriate physiotherapists, nationally trained physiotherapy tutors and final year students. The final year students were posted on rotation, and were under supervision. Other physiotherapy students (year 1, 2 and 3) were also introduced to the use of therapeutic equipment.

The main goal of physiotherapists is to reduce pain and restore functional movements and they can draw on a wide range of non-pharmacological treatment modalities including manual therapies, electrophysical agents, thermotherapy, hydrotherapy and graded exercise (Fransen, 2004). The patient's referrals at DWUPRRC were from public hospitals and private clinics. Further patients were received after advertising the Centre's services during events such as university open day, national and international disability day and world physiotherapy day.

The establishment of DWUPRRC provided hands on experience for tutors and final year students. DWUPRRC personnel were practising the manual record management system of patients since the inception of the facility. Documentation of patient's records assists in the communication between the health care team to provide a holistic patient care (Phillips, Stiller, & Williams, 2006). Therefore, to evaluate the use of the services offered at DWUPRRC, this study was undertaken to document the implications of the outpatient services offered at DWUPRRC.

## Methods

A retrospective observational study was conducted in two phases. Phase I included the data retrieval from patients records, while Phase II involved surveying the physiotherapy staff and students.

*Phase I:* The document sources were the patient records. The retrospective data was collected between June 2010 and June 2012, including patient identification number, age, gender, occupation, address, employment status, presenting complaint, and treatment prescribed.

*Patient record:* The patients who accessed the DWUPRRC were registered under a unique identification number consisting of the year and sequence (ex. 20xxPTxx). The recording form comprises the referral, demographic information, presenting complaint, history of the condition, subjective and objective assessment, and the provisional diagnosis along with the treatment plan and prognosis were recorded. The patients were issued with a registration card for their review and identification.

*Phase II:* A semi structured interview was conducted among physiotherapy staff and students providing patient care. This survey was conducted to identify the perception of the services offered; six final year students and two physiotherapy staff were randomly selected for the interview. The interview included information on service delivery, awareness, commonly used treatment methods, barrier to access the services and suggestions to improve the service delivery.

A self-administered questionnaire was used to survey the patient's perception of the services from DWUPRRC during the data collection period (13 – 24 August 2012). The questionnaire includes information on treatment satisfaction, awareness, and barriers to service accessibility, and recommendation to improve the service delivery.

*Ethical considerations:* A voluntary consent was obtained from the participants prior to data collection. The collected data were kept anonymous and no individuals were identified. Ethical clearance was obtained.

*Data analysis:* The collected data were coded in two separate specially designed Microsoft Excel© and analysed using SYSTAT® Student version v12.0.

## Results

*Patient data:* Two hundred and forty one patients were registered at the DWUPRRC between June 2010 and June 2012, 67.2% (n=162) males and 32.8% (n=79) females. Forty nine percent of patients were registered in 2010 (Figure 1). Adults patients (n=236) were the highest number compared to the paediatric (n=5) patients.

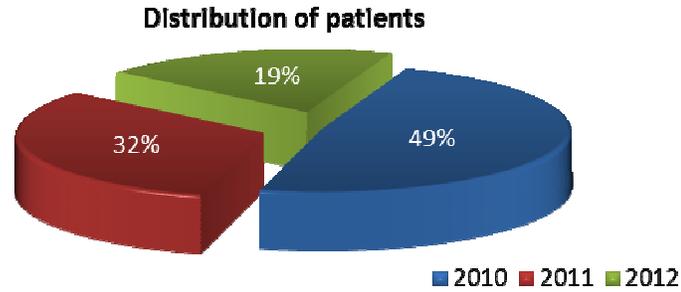


Figure 1: Distribution of patients in years

Over fifty percent of patients were from Divine Word University main campus (54.2%), in which 35.3% were students (n= 85) and over a third from Madang town area (34.7%) where they were referred by private clinics, public hospital (Modilon General Hospital) and other self-help organizations. The demographic information on the patients was shown in Table 1.

Table 1: Demographic distribution of patients

Category	n(%)
Gender	
Male	162(67.2)
Female	79(32.8)
Age	
Adult	235(97.9)
Paediatric	5(2.1)
Area	
Divine Word University	128(54.2)
Madang (Urban)	82(34.7)
Madang (Rural)	17(7.2)
Other provinces	9(3.8)
Missing	5(2.1)

One hundred and sixty patients (66.4%) were recorded with the presenting complaints of musculoskeletal problems and seventy six (31.5%) with neurological impairments. More than three quarters of patients (80.9%, n=174) received exercises and mobilization as treatment modality and over a fifty percent received electrophysical agents (n=150). Presenting complaints and treatment received were shown in Table 2.

Table 2: Presenting complaints and treatment received

Category	Frequency	Percent
Conditions		
Musculoskeletal	160	66.4%
Soft tissue injury	70	29.8%^
Neurology	76	31.5%
Missing	5	2.1%
Treatment		
Exercise and mobilization	174	80.9%^
Electrotherapy	150	69.8%^
Massage	50	22.9%^
Home advise	82	38.1%^

^Total not rounded to 100 percent due to repeated frequency.

Patient perceptions: Eight patients were surveyed after the completion of treatment sessions; two were review patients and six were new patients; all the patients were registered for musculoskeletal complaints. In regard to relief of symptoms seven patients found relief of pain after the treatment session. Exercise and electrotherapy were prescribed for six patients, and exercise and massage for two patients. All the patients were attended by a physiotherapist or a final year student within 10 – 20 minutes of their arrival. Patients were asked about the satisfaction of the physiotherapist's handling and care, using a close ended question, and all the patients expressed that they were satisfied with the physiotherapists care. The patients were asked to rate the services offered in 5-point Likert scale with the scale of 'Excellent' to 'Poor'. Six patients rated the services as excellent to very good and two patients rated them as good to fair (Figure 2). The patients identified barriers to accessing the physiotherapy service, including the lack of awareness and lack of full time staff at DWUPRRC.



Figure 2: Patient satisfaction rating

*Students and staff perception:* Two staff (national tutor) and six physiotherapy year 3 and 4 students were interviewed regarding the perception of physiotherapy services offered at DWUPRRC. All the participants indicated that the services offered at DWUPRRC are unique in the country. Students described the staff at the department as well qualified and sufficiently experienced to handle the patients. The staff and students were satisfied with the treatment that they rendered to the patients and indicated that they applied exercise therapy and electrophysical agents with greater confidence. The participants also mentioned that the combination of exercise and electrophysical agents provided speedy recovery. However lack of awareness was commonly identified as the major constraint for the service delivery. All participants perceived that the existence of the DWUPRRC was known to the DWU community and some in the town and expatriate community but not to the rural areas.

### **Discussion**

A total of 241 patient records were retrieved from the DWUPRRC over a period of three years. This study appears to be the first of its kind since the inception of the centre. The number of male patients was higher than the females, which was similar to a study by Powell (2001) which found that women and children were less involved in trauma than men, and that contributes to the higher number of male patients. The limitation in the number of patients accessing the services is due to the fact that the general public rely on provincial hospitals. Although the centre was established with good infrastructure for the physiotherapy staff and students, the same facility is not available in other physiotherapy departments in the provincial hospitals where most of the population go to. The highest number of patients came from the DWU campus, and that is where the centre is located, and all students and the DWU community know about the services. Physiotherapy referral depends on physicians and general practitioners in PNG. Although DWUPRRC received referrals, as the profession is new to the country, the knowledge of physiotherapy services is limited amongst the health care professionals (van Lieshout, 2010).

The largest group of patients presented with musculoskeletal complaints. The increase in the number of registrations or referrals for musculoskeletal conditions (Powell, 2001) is a common trend in physiotherapy outpatient settings. Physiotherapy can be delivered in various formats in the outpatient setting along with home based exercise programs especially for the musculoskeletal conditions (Fransen, 2004). Physiotherapists are considered as first-contact clinicians sometimes for musculoskeletal conditions (George et al., 2011) and use therapeutic exercise for effective management (Zusman, 2004), and the physiotherapists in the Centre commonly used a range of motion exercise including mobilization and home exercise. The other commonly used modalities were electrophysical agents and massage. The physiotherapists also considered combination therapy such as exercise and electrophysical agents, which were found to be effective as indicated by Fransen (2004). Deutscher et

al. (2009) identified that better functional outcomes were found to be achieved while using active exercise. Over a quarter of patients were registered with soft tissue injuries due to sports activities (Liu & Nguyen, 1999). The highest number of patients was registered in 2010. However the number has reduced in the following years perhaps due to the lack of adequate awareness of the services available.

The patients found the services offered at DWUPRRRC were effective and rated them as excellent. In the literature patient satisfaction is regarded as an important component in health care (Hills & Kitchen, 2007). The overall patient satisfaction was related to the degree with which the physiotherapist interacted with the patients (Beattie, Dowda, Turner, Michener, & Nelson, 2005). Health care providers who are cheerful, kind and courteous can achieve patient satisfaction (Boshoff & Gray, 2004). Although patients were satisfied with the services offered, they also said there was a lack of awareness of the services available at the Centre. The same constraint was expressed by the staff and students at the department. The availability of the centre was known only to the DWU community and Madang town. Although there were some references from other provinces there were only seven percent from rural areas of Madang. This trend shows a lack of identity with the public (Struber, 2003) and there needs to be more awareness of the benefits of physiotherapy that can contribute to the healthy wellbeing of people (Powell, 2001). The lack of knowledge about the profession could lead to misconceptions (Jackson, 2004), hence it's also important to promote the profession amongst the community for better patient satisfaction. Physiotherapists have to take the lead to increase the awareness of physiotherapy among the health care workers and the general public regarding the availability and accessibility of the existing services (Lee & Sheppard, 1998).

The staff and students expressed satisfaction with the staff supervision during their placements in the centre. Clinical supervision is a familiar term for physiotherapists in the context of workplace learning for undergraduate students and as an activity for the staff to develop clinical reasoning and support from the senior colleagues (Sellars, 2004). The national tutors were supervised by senior colleagues as they were young graduates with limited teaching and clinical exposure. DWUPRRRC aided them to develop their teaching and learning skills. Furthermore, students indicated that they have experienced effective hands on learning experience and this assists in their professional development. The other aspect of clinical supervision is continuous professional development and reflective practice (Clouder & Sellars, 2004).

### **Conclusion**

DWUPRRRC is a milestone for physiotherapy training in PNG. Physiotherapy is concerned with identifying and maximising quality of life and movement potential within the spheres of promotion, prevention, treatment/intervention, habilitation and rehabilitation (WCPT, 2011). Therefore, physiotherapists in the outpatient setting can devise a range of non-pharmacological interventions.

The DWUPRRC was established at DWU to create an environment conducive to teaching, learning and research. Evidence based practice and clinical decision making skills were demonstrated to the students and the patients attending DWUPRRC. This kind of teaching and learning training enables the physiotherapists to assist the persons with disabilities to access the services and to promote rights based mainstream treatment (Ramalingam, Karthikeyan, & Akiro, 2011). The centre is also aimed at providing quality physiotherapy services to the community. Documentation of patient records and clinical supervision play a major role at the centre.

The DWUPRRC has reached a reasonable number of patients in the past three years. The research found that the majority of the patients were from the DWU community and from Madang town. The main constraint would be that it is not yet reachable by the rural population. This could be due to the different sources of problems, which include the lack of awareness (Lee & Sheppard, 1998; Powell, 2001; van Lieshout, 2010), limited physical accessibility or economic constraints. Hence awareness programs need to be scheduled to increase the accessibility among the health care professionals and the general public. There is a need for the DWUPRRC to expand the physiotherapy services to the rural areas in collaboration with stakeholders.

The centre uses a standardised patient record of complaints and diagnosis. Although most of the patients were diagnosed with musculoskeletal complaints the specific diagnoses were not reported. Therefore, a follow up study should focus on specific patient diagnosis, approximate treatment duration and appropriate prognosis of the patient. This study also recommends compiling the data digitally for validity and reliability. Electronic recording of patients is found to be helpful in a variety of activities including education, research and development. Electronic reporting will also provide assistance in managing and supporting patient care services (Vreeman, Taggard, Rhine, & Worrell, 2006). DWUPRRC strives to serve the communities through quality research and rehabilitation services.

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