

Investigating factors that influence success of Pacific students in first-year health sciences at university in New Zealand

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Abstract

Aims Pacific peoples in New Zealand are a migrant population and suffer disproportionately from poor education outcomes compared to the total population. The purpose of this study was to understand factors that influence academic achievement of Pacific students studying health sciences at the University of Otago.

Methods Pacific students enrolled in health sciences first year (HSFY) in 2010 were invited to complete a questionnaire on their experiences and adjustment to university. It sought information on university preparedness and “engagement factors”. Academic results were obtained.

Results 90% of eligible Pacific students completed the questionnaire. Most students scored their experiences at university highly. Following first semester exams, 60% passed all papers and 40% failed one or more papers. Of those who failed a paper, 50% felt they had developed good study skills. One-third would memorise facts without fully understanding them. Fourteen (23%) HSFY students were successful in getting into a health professional course after end-of-year exams.

Conclusions Factors influencing academic outcomes of Pacific students at first year of study at University are complex. Further research focussing on effective roles universities can play in the provision of support, and the influence of preparedness prior to entering university is required.

Pacific peoples living in New Zealand, a migrant ethnic group make up approximately 7% of the total population.¹ Since the 1960s, increasing numbers migrated to New Zealand from different islands in the Pacific for better employment and educational opportunities.²⁻⁴

The Pacific population however is over-represented in poor health statistics and socioeconomic determinants of health when compared to the total population.^{1,5} Pacific peoples share many concerning socioeconomic factors which influence health with Māori, the indigenous people of New Zealand.⁶

Education is an important determinant of health.⁷ In recent times there has been some improvement in education outcomes for Māori students; however, concerning trends remain unchanged for Pacific students.⁸ For example, completion rates for Pacific students in tertiary education was lower than all other ethnic groups, including Māori.⁸

The issues involved are complex and influenced by student development and preparation prior to university,⁹ transition and experiences at university¹⁰ and socioeconomic and cultural factors.⁷ In response to these concerns, the New Zealand

Government outlined Pacific plans to improve health and education outcomes for Pacific peoples.^{11,12} Increasing the number of Pacific peoples successfully completing health education training will contribute to improving outcomes, and provide a diverse workforce for a multi-ethnic society in New Zealand.

Pacific health professionals make up 1% of doctors, 2.8% nurses, 0.7% physiotherapists, 0.5% dentists, and 0.2% pharmacists in the New Zealand health workforce.¹³ A government strategy to addressing disparities included improving educational achievements, and Tertiary Education Institutions are expected to be part of the solution.¹⁴

The University of Otago has four academic Divisions with 21,780 enrolled students in 2010. The Division of Health Sciences is the largest provider of health education and professional training in New Zealand. It has the first established medical school in New Zealand, the sole training site for dentists, provides training in physiotherapy, pharmacy, oral health, medical laboratory science, bio-medical science and radiation therapy. In 2010, there were 4702 students enrolled in the Division. Of these, 163 (3.5%) self-identified as Pacific students.

Students who wish to enter a health professional course at the University of Otago are required to enrol in the competitive HSFY course.¹⁵ The academic requirements for entry into a health professional course varies across different programmes within the Division.¹⁶ Some health professional courses have Affirmative Action Programmes for minority groups, which seek to increase the entry of students from under-represented minorities. Similar programmes are offered in the USA and UK universities.^{17,18}

The number of Pacific students successful in entering health professional courses following the HSFY course however is low, and numbers have not increased over the past decade.¹⁹

Previous studies have outlined the importance of the “first-year experience” for students in Universities.^{20,21} Many tertiary institutions in the USA, UK and more recently in Australasia have used national student surveys focussing on “student engagement” to identify areas associated with successful academic outcomes.²²⁻²⁴ “Engagement” is the extent to which students devote to educationally purposeful activities and the policies and practices that institutions use to encourage students to take part in these activities.^{21, 24, 25}

These surveys found a supportive campus environment, good staff-student and student-student interactions, high level of academic challenge, collaborative learning environment and enriching educational experiences were linked to successful academic outcomes for students.

Research in the USA however have often grouped students from the Pacific Islands and those from Asian countries together,²⁰ and a recent Australasian study provided very limited information on Pacific students and “engagement” in New Zealand.²⁴ There has been some research and work in New Zealand on tertiary education for Pacific peoples in New Zealand,²⁶⁻²⁹ however none of these has focussed specifically on first year health sciences at tertiary level.

We conducted this research with the aim to understand “engagement”, transition and adjustment to university for Pacific health sciences students in their first year of study, and investigate the relationship between these and academic outcomes.

Methods

Students who identified with a Pacific Island ethnicity at registration and enrolled in the HSFY programme at the University of Otago in 2010 were eligible to participate. Pacific students were identified from the Division of Health Sciences database and recruited mid-way through the first semester over six weeks. Recruitment started on 24 April 2010. A message was sent from the Associate Dean (Pacific) by e-mail to all eligible students, explaining the purpose of the survey and inviting everyone to participate.

Students were recruited by Pacific research assistants during a Pacific HSFY student forum. Those who participated went into a draw for a raffle to win prizes (valued at \$150, \$100, and \$50). A small gift was offered to students who completed the questionnaire at later events during lunch hours, and after tutorials offered by the Pacific Islands Centre. In the final week of the survey, remaining students were contacted through mobile phone and offered the opportunity to participate.

All students who agreed to participate were given information sheets outlining the aims of the research and contact details if they had further questions. Ethical approval was obtained from the University of Otago Human Ethics Committee at the departmental level.

The questionnaire obtained information about students’ socio-demographic background, career choice, transition and adjustment to the University environment, study skills, perception of learning, engagement with peers, and use of existing support networks. Responses consisted of a five-point Likert rating scale (ranging from 1=Strongly disagree to 5=Strongly agree). Other response scales included: “Not very well” to “Very well” and “Not very close” to “Very close”.

Data from the questionnaires were entered into an excel sheet. Results from first semester exams and successful entries into health professional programmes at the end of the year for all students were obtained. Data were analysed using SPSS statistical software.

Results

Sixty-six students were identified as Pacific from the Division of Health Sciences database. Eleven students enrolled online at the beginning of the year, but did not attend university and were excluded. Six Pacific Island students completed the questionnaire, but were not on our original database. Of the 61 students who were eligible to participate, 55 completed the survey, one declined, and five could not be contacted, giving a response rate of 90%.

Of the 55 participants, 60% passed all papers and 40% failed one or more papers from the first semester exams. Of the 61 Pacific students who enrolled in the HSFY course in 2010, 14 (20%) were successful in getting into a health professional course in 2011. Five in physiotherapy, four in medicine, three in pharmacy and two in dentistry.

Baseline demographic details are presented in Table 1. The majority of students (96%) had parents who lived outside the university city area. Most students (63.5%) lived in a residential college/hall, 21.8% flatting situation, 9.1% with parents/relatives, and 5.5% in other living arrangements. Ninety one per cent of students entered university directly from high school. Most students (73%) indicated a preference for studying medicine if they were successful in their HSFY course. Fifteen per cent indicated a preference for dentistry, 6% physiotherapy and 6% a range of other health courses.

Most (85%) preferred to stay within the health sector as a career pathway, even if they did not succeed the following year in getting into their preferred health course. Of

these, some preferred to complete a degree and apply again to their preferred course through the graduate entry pathway, others indicated they would train in a different health area.

Table 1. Demographic characteristics of Pacific students enrolled in Health Sciences First Year (HSFY)

Demography of study participants		n (%)
Age group (years)	16–19	45 (81.8)
	20–24	7 (12.7)
	25–29	2 (3.6)
	30–49	1 (1.8)
Gender	Female	35 (63.6)
	Male	20 (36.4)
Ethnicity	Samoan	12 (25.5)
	Cook Islands (Māori)	4 (7.3)
	Tongan	9 (16.4)
	Niuean	0 (0.0)
	Fijian Indigenous	4 (7.3)
	Fijian Indian	22 (40.0)
	Tokelauan	1 (1.8)
	Other Pacific ethnicity	1 (1.8)
Did not respond	2 (0.0)	
Languages spoken	English only	20 (37.0)
	English plus Indigenous language	17 (31.5)
	English plus Indian language	15 (27.8)
	English and non-PI language	2 (3.7)
	Did not respond	1 (0.0)

Table 2 shows five areas which describe the “first year experience” of Pacific students at the University of Otago. Most students reported satisfaction with their transition into university life, felt the campus environment was supportive and positive, integrated well with their peers and developed friendships, received good academic support, and sought or felt able to seek assistance for their studies. One-quarter struggled with the course, 22% were not coping with the academic workload, and 18% felt the workload was not what they expected it to be.

Table 3 shows study skills of participants and academic performance in the first semester exams. Most students felt they were able to get help for their academic courses when needed, work independently, and had developed good study skills. Half of those who failed a paper “agree/strongly agree” they had developed good study skills. Students who passed all papers were more likely to “agree/strongly agree” they “feel confident to approach lecturers for advice and assistance” than those who failed a paper. This result was statistically significant.

Table 2. The experiences of Pacific students in HSFY

Variables	Disagree/Strongly Disagree	Somewhat Agree	Agree/Strongly Agree
	1 to 2 n (%)	3 n (%)	4 to 5 n (%)
Transition to University			
I was well prepared for University by my previous education experience	6(11)	18(33)	31(56)
Study at University was what I expected it to be	10(18)	12(22)	33(60)
I am confident doing HSFY was the right decision	1(2)	10(18)	44(80)
I am enjoying my course very much	4(7)	12(22)	39(71)
I feel lonely most of the time since arriving at University	44(80)	8(15)	3(5)
I am seriously considering dropping out of University	54(98)	1(2)	
Overall I am happy with my experiences at the University of Otago	1(2)	6(11)	48(87)
Campus Environment			
I think the University of Otago as a whole takes an interest in student welfare	3(5)	11(20)	41(75)
I really enjoy organised Pacific student events*	4(8)	15(28)	34(64)
My academic experiences at University so far has been positive	1(2)	20(36)	34(62)
The University of Otago is not providing enough support for the social and cultural needs of Pacific students	39(71)	8(15)	8(15)
Peer Engagement			
I have made a lot of friends	2(4)	3(6)	50(91)
I usually 'hang out' mostly with Pacific students	33(60)	4(7)	13(33)
I am ok with 'hanging out' with students from different ethnic backgrounds	3(5)	1(2)	51(93)
I discuss my work with other students studying the same subject	2(4)	5(9)	48(87)
Staff-Student engagement			
The University of Otago provides good academic support for Pacific students	0	6(11)	49(89)
Academic staff make it clear what is expected of us	4(7)	14(26)	37(67)
I am able to get help for my academic course when I need it	1(2)	7(13)	47(75)
I feel confident to approach lecturers for advice and assistance	14(25)	11(20)	30(55)
Academic Challenge			
The workload is what I expected it to be	10(18)	15(27)	30(55%)
I am having difficulty with most of the material in the course	22(40)	19(35)	14(25)
I have regularly sought extra help for my studies†	7(13)	14(26)	33(61)
I am not coping with the workload	25(45)	18(33)	12(22)
I will probably change to another course in 2011	42(76)	7(13)	6(11)

*missing 2 responses, † missing 1 response.

Table 4 outlines students' perception of learning and academic performance in the first semester exams. Students who passed all papers were more likely than those who failed a paper to "agree/strongly agree" that "learning for me is building up knowledge by acquiring facts and information", and "learning for me is knowing how to acquire knowledge on my own". These results were statistically significant. More than half of all participants felt the need to pass exams and complete assignments were their main reasons for studying. Approximately one-third of all students would memorise facts they did not fully understand.

Table 3. Pacific students in HSFY, study skills and academic performance

	Strongly Disagree	Disagree	Somewhat Agree	Agree	Strongly Agree	Total	p-value
Able to get help for my academic course when I need it							
Pass All Papers	0.0%	0.0%	12.1%	33.3%	54.5%	100.0%	0.641
Fail 1 or More Papers	0.0%	4.5%	13.6%	27.3%	54.5%	100.0%	
Able to work independently without much direction from lecturers							
Pass All Papers	6.1%	3.0%	15.2%	48.5%	27.3%	100.0%	0.385
Fail 1 or More Papers	4.5%	0.0%	27.3%	59.1%	9.1%	100.0%	
Feel confident to approach lecturers for advice and assistance							
Pass All Papers	15.2%	3.0%	18.2%	33.3%	30.3%	100.0%	< 0.01
Fail 1 or More Papers	0.0%	36.4%	22.7%	27.3%	13.6%	100.0%	
I have developed good study skills							
Pass All Papers	6.1%	12.1%	21.2%	39.4%	21.2%	100.0%	0.612
Fail 1 or More Papers	9.1%	4.5%	36.4%	27.3%	22.7%	100.0%	

Table 4. Pacific students in HSFY, perceptions of learning and academic performance

	Strongly Disagree	Disagree	Somewhat Agree	Agree	Strongly Agree	Total	p-value
Learning for me is knowing how to acquire knowledge on my own							
Pass All Papers	0.0%	3.0%	3.0%	45.5%	48.5%	100.0%	< 0.05
Fail 1 or More Papers	0.0%	0.0%	31.8%	27.3%	40.9%	100.0%	
Learning for me is building up knowledge by acquiring facts and information							
Pass All Papers	0.0%	0.0%	6.3%	40.6%	53.1%	100.0%	<0.05
Fail 1 or More Papers	0.0%	0.0%	33.3%	38.1%	28.6%	100.0%	

When I learn, I try to memorise a lot of facts I don't fully understand						
Pass All Papers	24.2%	18.2%	27.3%	21.2%	9.1%	100.0%
Fail 1 or More Papers						
						0.531
Pass All Papers	13.6%	31.8%	22.7%	13.6%	18.2%	100.0%
Fail 1 or More Papers						
						0.850
The need to pass exams and to complete assignments are my main reasons for studying						
Pass All Papers	12.1%	6.1%	18.2%	30.3%	33.3%	100.0%
Fail 1 or More Papers						
						0.850
Pass All Papers	9.1%	13.6%	22.7%	22.7%	31.8%	100.0%
Fail 1 or More Papers						
						0.850

Table 5 shows preparedness for university and academic performance in the first semester exams. Students who passed all papers were more likely than those who failed a paper to “strongly agree” that taking HSFY was the right decision and that they “disagree/strongly disagree” about not coping with the workload. These results were statistically significant. Those who “strongly agree” the workload was what they expected it to be, were more likely to pass all papers. Of all students, most felt that they were prepared for University by their previous education experience.

Table 5: Pacific students in HSFY, preparedness for university and academic performance

	Strongly Disagree	Disagree	Somewhat Agree	Agree	Strongly Agree	Total	p-value
Prepared for University by previous educational experience							
Pass All Papers	6.1%	6.1%	24.2%	51.5%	12.1%	100.0%	
Fail 1 or More Papers	4.5%	4.5%	45.5%	31.8%	13.6%	100.0%	0.537
Workload what I expected it to be							
Pass All Papers	3.0%	9.1%	30.3%	24.2%	33.3%	100.0%	
Fail 1 or More Papers	4.5%	22.7%	22.7%	36.4%	13.6%	100.0%	0.316

Not coping with the workload							
Pass All Papers	18.2%	42.4%	21.2%	18.2%	0.0%	100.0%	
Fail 1 or More Papers	4.5%	18.2%	50.0%	18.2%	9.1%	100.0%	< 0.05
Confident HSFY was the right decision							
Pass All Papers	0.0%	0.0%	3.0%	27.3%	69.7%	100.0%	
Fail 1 or More Papers	0.0%	4.5%	40.9%	36.4%	18.2%	100.0%	<0.001

Discussion

The “first-year experience” of Pacific students studying Health Sciences at the University of Otago was positive for most students. Students scored favourably their experience of transition to university, the campus environment, and engagement with peers and staff. Previous research suggested these factors were associated with successful academic outcomes for students in the first year of study at university.^{21, 25, 30}

Following the first semester exams, 60% passed all papers, and 40% failed one or more papers. Nearly one quarter were successful in getting into a health professional course after end of year exams. Those who strongly felt they were doing the right course, confident to seek help, and coping with the workload were more likely to do well, as were those had a self directed approach to learning.

Of those who failed a paper, 50% felt they had developed good study skills, and 45% felt they were prepared for University by their previous educational experiences. At least half of all students felt the need to pass exams and complete assignments were the main reason for studying, and one-third would memorise facts without understanding them.

These results show factors associated with success or otherwise of Pacific students at University level are complex. Transition into university and “engagement” factors satisfaction were at a high level for most students, however, overall academic performance was low. Although many students felt they were prepared for university study, academic performance in the first year of study suggests otherwise. Pacific students’ preparedness for university, perception of their study skills, purpose for and methods of learning require further investigation.

Most students identified either medicine or dentistry as their preferred course. The aspirations of most HSFY students and their families are for these highly desirable careers. Universities need to consider how it can respond to students who do not gain entry into these programmes, and provide opportunities to students from underserved communities.³¹

The health sector in New Zealand requires Pacific health professionals in many areas. There is a need for health training institutions to effectively promote to the wider community all available health courses. For example, there are very good careers in

less well known areas such as radiation therapy, oral health and biomedical sciences where entry are less restrictive.

Our results suggest that there may be possible disparities between different Pacific ethnic groups and access to higher education. For example, nearly half of study participants were Fijian, 26% Samoan, 16% Tongan and 7% originate from the Cook Islands. However, for all Pacific peoples living in New Zealand, the majority (50%) are Samoan, 22% Cook Islands, 19% Tongan and 4% are Fijian. A national study comparing different Pacific ethnic groups access to, and academic performance in higher education may provide useful information for targeted initiatives.

The ability to communicate well with patients is an important aspect of health care.³² Approximately 60% of students were bilingual. This is a useful skill when working with Pacific patients in New Zealand where language can be a barrier. Previous research indicated students who stayed in residential halls had better academic outcomes compared to those who were not.³³ Most students in our study stayed in halls of residence. It may be useful to investigate this relationship further with Pacific students where sufficient numbers would allow comparisons.

The strengths of this study include the high response rate. This is partly due to the University's developed relationships with Pacific students through its student organisation Pacific Islands Health Professional Students Association (PIHPSA) and local Pacific support networks. Maintaining good relationships with Pacific students, their families and the wider community will assist future developments and research.

There were however, limitations in our study. The recording of ethnicity data was problematic. Some Pacific students who completed the questionnaire were not identified as Pacific on the University data system, and others were recorded as enrolled but never started the year. The data used for monitoring all Pacific students within the University system therefore, may not be complete or may have inaccuracies.

Conclusions

Factors influencing academic outcomes of Pacific students at first year of study at university are complex. There is an urgent need to better understand these factors and how to address them effectively for improved education outcomes. "The knowledge obtained from this research will guide future services and interventions for Pacific health sciences first year students at the University.

Since completing the research reported in this article, we have developed a targeted programme for Pacific health sciences student called the POPO (Pacific orientation programme at Otago). This is a specifically tailored transition programme for Pacific health sciences students into the University. A stage two pilot is planned for 2012".

It is important also to engage the Pacific community when developing solutions and pathways forward. Further research focussing on effective pathways for preparing Pacific students in health sciences from schools to higher education, including barriers and enablers for success, is needed.

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