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The Prevalence of Postgraduate Education in Youth Health Among High School Clinicians and Associated Student Health Outcomes

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A B S T R A C T

Purpose: Despite numerous calls to improve training in adolescent health, there is little known about the prevalence or effectiveness of specialized training in adolescent health.
Methods: A two-stage random sampling cluster design was used to collect nationally representative data from 8,500 students from 91 high schools. Student data were linked to data from a survey of school health clinicians from participating schools on their level of training in youth health. Multilevel models accounting for demographic characteristics of students were used to estimate the association between nurses and physicians training in youth health and health outcomes among students.
Results: Almost all nurses and physicians reported some training in youth health, either having attended lectures or study days in youth health (n = 60, 80%) or completed postgraduate papers in youth health (n = 13, 17.3%). Students in schools where the nurses and physicians had received postgraduate training in youth health were less likely than students from schools with clinicians having attended lectures or study days in youth health to report emotional and behavior difficulties (11.8 vs. 12.7, $p = .002$) and binge drinking (19.6% vs. 24.9%, $p = .03$). There were no significant associations between depressive symptoms, suicide risk, cigarette, marijuana, contraception use, or motor vehicle risk behaviors among students and level of training among clinicians in their schools' health service.
Conclusions: Postgraduate training in youth health among nurses and physicians in school health services is associated with fewer students reporting mental health difficulties and binge alcohol use. These findings support specialized training in youth health for clinicians working predominantly with young people.

IMPLICATIONS AND CONTRIBUTION

Despite numerous calls for clinician training in adolescent health, few studies have investigated the prevalence or impact of training programs. This study documents levels of training in adolescent health among a nationally representative sample of school-based nurses and physicians and the association with health outcomes among high school students.

Many clinicians who work with adolescents feel unprepared to address their unique psychosocial and health needs [1,2]. Moreover, the current training that health professionals receive is often inadequate to address the complex health issues of

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adolescents [3,4]. Despite numerous calls to improve the training of health professionals who work with adolescents [5–9], there is little evidence to suggest that specialized training in adolescent health can improve the health outcomes of young people.

In New Zealand, training in adolescent health is generally limited to a single, 1- to 2-hour session for undergraduate students in medicine and nursing, and community training sessions on an ad hoc basis. Sanci et al. [10] have shown that effective training of clinicians in adolescent health requires a structured program, ideally over 15 hours, with follow-up and opportunity for case discussion and debriefing. In New Zealand, the only formally recognized training of this nature is available through postgraduate training in youth health at the University of Auckland. This training covers adolescent health and development, communication and consultation skills, health-risk screening, mental health, and sexual health as part of a postgraduate certificate or diploma in youth health.

Studies that measure the impact of youth health training programs on the health outcomes of young people ideally would be through randomized studies of clinical training interventions that track adolescent health outcomes over time. These types of studies are difficult as they must address the many challenges of real-world interventions, such as including large enough sample sizes to show meaningful differences across multiple health outcomes, obtaining follow-up data without excessive attrition, and ensuring consistent service delivery across multiple sites. Another approach is to use multilevel observational data to examine the natural variation of trained youth health clinicians and their association with health outcomes among adolescents. While these sorts of observational studies are limited in their ability to draw causal inferences, these type of data may provide useful information for policy and to inform further studies.

In New Zealand, most school health services are regular clinics held on a certain time during the week by a visiting health professional, often a public health nurse or occasionally a physician. A smaller number of schools have clinical staff, usually nurses, onsite for the entire week; some of these schools have further support from visiting physicians. Students are able to drop-in to school health services for any health concerns, ranging from acute medical conditions to longer term chronic medical conditions, mental health concerns, or other health complaints. Students are sometimes referred to the school clinic by pastoral care staff or teachers when they are concerned about the students' behavior or mental health. Funding of school health services in New Zealand high schools varies considerably based on the socioeconomic status (SES) of the community in which the school is located. Schools in low SES communities receive greater funding and as a result are able to deliver more comprehensive health care services compared with schools in mid to higher SES communities.

Although there is a growing workforce of school-based clinicians who deliver health care in New Zealand high schools, it is unknown how many of these school nurses and doctors have had postgraduate training in adolescent health. The aim of these analyses is to document the level of training in adolescent health among clinicians working in school health services and to examine the relationship between school health services provided by clinicians with specialized training in youth health and associated health outcomes of high school students in New Zealand.

Methods

Student data were collected as part of Youth'12, a health and well-being survey of New Zealand high school students conducted in 2012 [11]. A two-stage random sampling cluster design was utilized to select a nationally representative sample of 8,500 high school students from 91 high schools accounting for 3% of the total high school roll in New Zealand. Response rates for schools and students were 73% and 68%, respectively. The anonymous, comprehensive, 608-question multimedia survey was administered using Internet tablets [12]. No keyboard data entry was required; questions and answers could also be heard through headphones, and responses were made by touching the screen. Written consent was required from each participating school and student, while parents could opt to have their child excluded from the survey.

Data on level of training in youth health among school health clinicians were obtained from a Health Services Survey conducted following the student survey in 2012. All schools that had taken part in Youth'12 were invited to participate in a Health Services Survey. A letter was sent to all principals asking for their consent to take part and who to contact in their school regarding school health services. Of the 91 schools that participated in Youth'12, 11 reported no health services except first aid care and 1 school had subsequently closed. Among the remaining 79 schools, 129 health and pastoral care staff (e.g., guidance counselors, social workers) were identified working in these school's health services and were invited to take part in a health services survey. One hundred and thirteen health and pastoral care staff replied to the health service survey (88% response rate), which included 80 nurses and physicians from 70 schools; the majority of which were nurses (n = 74, 92.5%) with a smaller number of doctors (n = 6, 7.5%). Ethics approval was gained from the University of Auckland Human Participants Ethics Committee (ref 2011/206).

Training in youth health

Nurses and physicians working in schools were asked the question "What training/professional development in youth health have you had? (You can tick as many as apply)" with response options ranging from "none" through to "I have a postgraduate diploma in youth health." Responses were grouped based on the highest level of training in youth health to three groups: no training in youth health, lectures or study days in youth health, and postgraduate courses in youth health (Table 1). Currently, in New Zealand, the only youth health courses available are the postgraduate courses in youth health at the University of Auckland and there are few nurses or physicians trained in youth health from institutions outside of New Zealand. Therefore, postgraduate studies in child and youth health were not counted as postgraduate training in youth health as in New Zealand, these courses have very little youth-specific content.

School characteristics

High schools in New Zealand are comprised of grades 9–13, and students are typically 13–17 years of age. Structural characteristics of schools were obtained from the New Zealand Ministry of Education. Schools were characterized by student gender (coeducational, boys only, or girls only); school type (private, integrated, or state funded); size of student roll