

Factors Contributing to a School's Decision to Apply for the California Instructional School Garden Program

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ABSTRACT

Objective: To compare the applicant schools (AS) to non-applicant schools (NAS) residing in the same school districts for the California Instructional School Garden Program and identify barriers to the application process.

Methods: A case-control, cross-sectional study design was used to compare resources and school environments. Pearson chi-square and logistic regression were conducted.

Results: Public schools throughout California participated (n = 1,662). The response rates for AS and NAS were 43.2% and 48.2%, respectively. Applicant schools had greater access to garden coordinators and parent/community volunteers dedicated to school gardens, and they had other sources of funds/grants to support school gardens compared to NAS (P < .001).

Conclusions and Implications: Access to certain garden resources played a significant role in predicting whether schools would decide to participate in the California Instructional School Garden Program.

Key Words: schools, gardens, nutrition education, school wellness (*J Nutr Educ Behav.* 2012;44:379-383.)

INTRODUCTION

School-age children consume half or less of the recommended amount of fruits and vegetables.¹ Key predictors for fruit and vegetable consumption among children ages 6–12 are preference, accessibility, and availability.² Children who participate in nutrition education interventions that are connected to school gardens have shown an increased preference for and consumption of fruits and vegetables.³⁻⁹ School gardens may also be viewed as instructional aids.^{6,9,10} Though the literature identifies that school gardens have the potential to enhance instruction, improve fruit and vegetable consumption, and overall, have a positive impact on the development of students, there is still a large gap in understanding which factors lead to the creation and sustainability of school gardens.¹¹

In 1995, the California Department of Education (CDE) launched the *A Garden in Every School* Initiative.

Assembly Bill 1014,¹² *Instructional School Gardens*, established the instructional school garden program, and Assembly Bill 1535,¹³ *California Instructional School Garden Program* (CISGP), passed in 2006, allotted, under the direction of the CDE, \$15 million for grants to promote, develop, and sustain instructional school gardens for 3 years (2007–2009). The CISGP applications were available from February 2007 to April 2007. All California kindergarten (K)-12 public schools were eligible for the grant, which allowed for the provision of \$5,000 for schools with 1,000 or more students, and \$2,500 for schools with fewer than 1,000 students. The grant funds could be used from January 2008 to July 2009 (approximate dates) for equipment, supplies, and professional development, but the money could not be used for garden coordinator stipends. All schools had the opportunity to apply through their district office or county office of education, with the exception of

direct-funded charter schools, which were able to apply on their own behalf.

The CDE reported that almost 40% of all California schools applied (n = 3,849, 39.5%) for the grant, and \$10.9 million grant funds were awarded; all schools that applied were awarded. A majority of the schools (88.9%) applied through a school district. The grant funds were dispersed in January 2008. This study was designed to identify barriers to and promoting factors for the CISGP application process and to gather characteristics of California public schools.

METHODS

Study Design

A case-control, cross-sectional study design was used to compare several characteristics of the schools that applied to characteristics of the schools that did not apply to the program. Unfortunately, accurate socioeconomic information was not available for these schools, and to control for confounding variables, the applicant schools (AS) consisted of only schools that applied through their school district and the control schools, non-applicant schools (NAS), were within those same school districts, but did

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not apply. The CISGP grant application was used to provide baseline data for the AS. This study was approved by the University of California–Davis Institutional Review Board with exempt status.

Survey Development

Two survey tools were used to collect data. The School Garden Awareness Survey (SGAS) was developed to gather information about the characteristics of the NAS and identify barriers to instructional school garden programs and the CISGP application process. The majority of survey questions focused on the school environment during the time period of the CISGP application (February 2007 to April 2007). Several survey questions were from a previously published survey.¹⁴

The Garden Grant Follow-Up Survey (GGFS) was developed to gather similar information obtained in the SGAS from AS during the same time period (February 2007 to April 2007). In addition, the SGAS was tested for content clarity prior to use in the study. Principals ($n = 216$) from schools districts in which no schools applied received an electronic version of the survey. Their comments were used to create a new version of the survey.

Survey Distribution

SurveyMonkey was used to disseminate both the SGAS and GGFS.¹⁵ The most current CDE principal database was used to contact principals of schools that fit the NAS criteria ($n = 3,547$). The SGAS was sent out in November 2008 after removing the blocked and incorrect e-mail addresses. A total of 1,662 SGAS were sent; a response rate of 48.2% was achieved.

A modified Dillman's Tailored Design Methodology was used to distribute the surveys electronically.¹⁶ A final e-mail was sent containing a link to the survey that allowed for an increased ease of responding.

To receive a GGFS, the AS had to provide a contact e-mail and have an exclusive contact person ($n = 3,103$). The contact person specified on the application was the recipient of the survey. The GGFS survey was sent out in March 2009 after removing the blocked and incorrect e-mail ad-

resses. A total of 1,992 surveys were sent, with a response rate of 43.2%.

Data Analysis

Descriptive statistics were used to report frequencies from both the SGAS and GGFS. Pearson chi-square was used to determine significant differences between categorical proportions. Binary logistic regression was used to determine which factors best predicted whether a school applied for the CISGP; the data were examined for normality and were normally distributed. $P \leq .05$ was considered significant. SPSS software (version 17.0, SPSS, Inc., Chicago, IL, 2008) was used to analyze data.

RESULTS

Garden Status at Non-Applicant Schools and Applicant Schools during Application Period

Non-applicant schools had significantly fewer gardens present (30.1%) than AS at the time of the application period (72.3%, $P < .001$). Of those NAS that had gardens, 59.4% were used for academic instruction, and 40.6% were not used for academic instruction. Barriers to not having a garden or having a garden not used for instruction were similar (Table 1).

Predictors for Applying for the California Instructional School Garden Program

1. Awareness of the CISGP by NAS was also assessed through the SGAS survey. Almost two thirds of NAS principals (65.8%) reported that they were not aware of the CISGP grants. Of those who were aware of the grant ($n = 220$), 23.1% said that they attempted to apply.
2. A higher percentage of AS had access to a garden coordinator than NAS ($P < .001$), although a substantial number of principals did not know whether they had access to a garden coordinator (Table 2). More AS had parent or community volunteers dedicated to school gardens than NAS ($P < .001$; Table 2). Furthermore, 19.0% more AS had

other sources of funds/grants to support school gardens than NAS ($P < .001$; Table 2). School resources that were significant predictors to applying for a CISGP grant included access to a garden coordinator, presently having a school garden, and parent or community volunteers ($P < .001$; Table 3). A school that has any other sources of funds/grants to support school gardens was not significantly more likely to apply for a CISGP grant ($P = .09$).

3. Some districts initiated the process but failed to submit the application for funding. Responses varied between NAS and AS regarding the impact of applying through the school district office: 43.4% of NAS reported that applying through their school district office was an encouraging factor in the application process, 52.8% of NAS reported that working with the district office had no effect on whether their school applied, and 3.8% of NAS reported that applying through the district deterred their school from applying compared to the AS respective responses 54.9%, 33.9%, and 1.7%. Both NAS that attempted to apply and AS (29.8% and 62.9%, respectively) reported that they were aware of an individual that coordinated schools in their districts to apply for a CISGP grant; 70.8% of those individuals were district office personnel.
4. The study also explored the impact of financial compensation. Regardless of the funding amount, 42.1% of the NAS reported that they would not have applied for a grant. In addition, 20.1% of NAS respondents reported that they would have applied if the grant award was more, and 2.8% reported that they would have applied if the grant award was less. Almost all (93.7%) of the AS reported that they would have still applied for the grant if the award was more, and 78.9% reported that they would have still applied if the grant award was less.

DISCUSSION

Results from this study show that there were several perceived barriers

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