Perceptions of Teachers in Japanese Elementary Schools Regarding Crime Risk and Crime Prevention Education

Takayasu Inoue*, Teppei Nunoura* and Risuke Karima**

*Environmental Research Center, The University of Tokyo
7-3-1 Hongo, Bunkyo-ku, Tokyo 113-0033 Japan
inoue@esc.u-tokyo.ac.jp
**Graduate School of Health Science, Teikyo Heisei University

Background: Crime prevention programs implemented to improve students' personal safety skills and avoid harm from crime have been introduced in Japan and many other countries. In Japan, in most cases, teachers themselves conduct crime prevention programs. For this reason, teachers' perceptions of actual conditions and challenges of crime prevention programs in their schools are closely tied to the provision of effective training content. However, Japanese teachers' perceptions related to students' crime prevention programs have not yet been investigated.

Objective: This study aimed to elucidate Japanese teachers' perceptions regarding the risk of victimhood for their students and implementation of crime prevention programs in their schools. In addition, this study intended to reveal the influence of the location of the school and teachers' individual characteristics such as years of teaching experience and positions on the perceptions.

Methods: A questionnaire survey on crime prevention programs was designed to collect data on teachers' perceptions of their students' risk of victimhood and on their schools' crime prevention programs. Additionally, the survey data were statistically analyzed using analysis of variance to determine how school location and teachers' years of experience were associated with differences in teacher's perceptions.

Results: The initial sample was 683 teachers working in 26 elementary schools in 7 Japanese prefectures; of these, 50.4% of the teachers (n = 344) participated in the study. The findings demonstrated that teachers have high perception of risk regarding students' victims of crimes, especially abduction, molestation, and indecent exposure, although that the teachers at schools in rural areas have fewer perceptions of the risk of student victimization, in particular with regard to molestation and online crime, than teachers in other areas. As to the teachers' perception of the implement of crime prevention programs in their schools, almost 80% of the teachers consider that crime prevention programs are proactively implemented in their schools. However, more than half of teachers feel that it is very or rather necessary to improve these programs for adjusting to the potential for crimes, especially in the teachers with less than 10 years' experience.

Conclusion: This study revealed that many teachers concerned about students' risk of being victimized through abduction and molestation, or other crimes. On the other hand, the differences about the perceptions of teachers due to school locations and length of teacher experience were shown. Additionally, the results revealed that the differences regarding the perceptions of schools' efforts for crime prevention programs depending on the length of teacher experience. These differences should be taken into consideration to upgrade elementary-school teachers' perceptions of student safety from crimes and to develop crime prevention programs at schools and associated training for teachers.

Keywords: crime prevention program, victimization, teachers' perceptions, survey research, elementary school student

I. Introduction

The crime report of the Japanese National Police Agency for 2016[1)] indicated that 13,264 crimes in that year victimized children under 13 years of age: 10,712 thefts, 812 molestations, 795 assaults, 90 indecent exposures, and 564 injury cases. As for molestation and indecent exposure in Japan, the number of molestation cases targeting children accounted for approximately 46.7% of all molestation crimes, and the number of cases of indecent exposures targeting children accounted for 44.3% of

all indecent exposures. Moreover, there were 67 abductions of children under 13 years of age, and 35.8% of these (23 cases) were sexually motivated. Thus, the risk of Japanese children becoming crime victims cannot be ignored.

In many European countries and the United States, large numbers of parents customarily pick up and drop off their children before and after school, but this is generally not the case in Japan. Few schools have dedicated buses, with the exception of schools in hillier and mountainous areas, and it is common for elementary-school students in Japan to go to school together in groups gathered in local areas. There are also such groups as neighborhood watches that keep an eye on school commuting routes, playgrounds, and school zones[2].

Safety education is administered in schools to prevent students from falling victim to crime. Several studies have reported on the effectiveness of crime-prevention programs in Japanese schools. Fujii developed the scale of crime prevention consciousness of elementary school students, and demonstrated the improvement of crime prevention measures in the elementary school students who were instructed by teachers using crime-prevention programs[3]. Nakasako and Kanazaki developed an educational material for crime-prevention programs for the lower grades of elementary school which adapt the role-playing, and conducted the crime-prevention program. As the result, they reported that the induction of their crime-prevention program enhanced the perception of the elementary school students to secure safety from strangers[4]. In the studies in other countries outside Japan, Weatherley et al. reported that students who participated in crime-prevention programs in schools had substantial improvement in safety skills, including in their following the "Say No" steps[5] against simulated crime attempts. Furthermore, Brenick et al. demonstrated that safety-skill programs administered by trainers can increase students' safety skills and knowledge of boundary setting, stranger safety, and help seeking; furthermore, the effects of the program were maintained over 3 months[6]. Other studies have reported that school-based crime-prevention programs contribute to improvements in crime-prevention knowledge and skills among students[7][8].

To administer effective crime-prevention programs to students, proper safety education and training materials are crucial. Such materials include side readers, video materials on crime-prevention, and reported news on actually occurring crimes against students. Additionally, web-based learning (e-learning) may help improve crime-prevention knowledge and skills among students, although web-based learning in this area remains under-used in Japan.

While visiting experts teach most crime-prevention programs in the United States[9], in Japan, regular school teachers typically perform this duty. For this reason, researchers considered it to be important to assess the perceptions of the teachers themselves in relation to crime-prevention programs and anxieties regarding their students' vulnerability. In the school safety promotion plan promulgated by the Ministry of Education, Culture, Sports, Science and Technology, it is noted that as school teachers are in charge of safety education, including crime-prevention, at elementary schools, they must be provided with information and proper teaching methods to protect their students' health and safety as part of their qualifications[10].

Several studies have examined elementary-school teachers' perceptions of their various duties. One study surveyed teachers regarding guidance of students' personal work and found teachers to be less self-confident of understanding their students and to experience greater difficulty communicating with parents[11].

Additionally, a study that examined teachers' perceptions of information education in elementary schools reported that many teachers required support in their response to individual differences such as computer literacy among students[12]. Furthermore, a study of teachers' perceptions regarding fire prevention and safety education implemented in elementary-school indicated that few teachers received fire prevention and safety education at university education, and only 22% were self-confident in their ability to perform fire prevention and safety education[13].

Teachers' perceptions in relation to crime-prevention programs in their schools have not been reported in Japan or in anywhere else of the world. The importance of understanding teachers' perceptions in relation to the crime-prevention education that teachers administer to their students led this study to elucidate Japanese teachers' perceptions of the risk of their students being victimized by crime and how far teachers are satisfied with the current implementation of crime-prevention programs in their schools. This study also examined how teachers' perceptions are affected by their schools' locations and their own individual characteristics, such as the length of their experience as teachers and their current positions. The results of this study will contribute to the creation of better education and training for crime-prevention by indicating the state of teachers' anxiety that their students may be victimized by various crimes and of teachers' perceptions relating to the crime-prevention programs in their schools.

II. Methods

Measurement

A questionnaire survey was designed to obtain information on elementary-school teachers' perceptions of their students' risk of harm by crimes and how those teachers feel the crime-prevention programs at their schools. The questionnaire included the following three types of items: teachers' attributes (6 items), teachers' perceptions of risk to their students to be victimized in various crimes (13 items), and teachers' perceptions of the state and needs of crime-prevention programs in their schools (7 items).

The questionnaires were mailed to elementary schools with sealable envelopes for their return. At each school, the principal, who had in each case allowed the study, or a teacher designated by the principal distributed the questionnaires to the teachers. The principals or designated teachers were also required to describe the location of their school, by choosing from among the following three alternatives: commercial or business area, outer-city residential area, and rural area. The completed forms in sealed envelopes were collected from each responder and returned by mail. The surveys were distributed from April to July 2015.

General characteristics of participants. The survey instrument collected information on gender, years of teaching experience, years of experience at present school, current position (including vise principal, curriculum coordinator, and teacher of student guidance) or school grade taught, presence or absence of any experience being responsible for school security, and presence or absence of experience as instructor in acquiring habits and attitudes for daily life.

Risk that students fall victim to crimes. The respondents ranked the probability that their students would be victimized in a list of certain crimes, namely abduction, rape, molestation,

indecent exposure, enticement, assault, robbery and theft, stalking, voyeurism, online crimes, online defamation and abuse, trespassing at the student's home, and trespassing at the school. These questions were ranked on a five-point Likert scale (1 = no risk at all, 2 = not much risk, 3 = some risk, 4 = strong risk, and 5 = very strong risk).

Simultaneously, using a check-all-that-apply question format, the teachers indicated the grade (from first to sixth) in which they felt their students would have the highest probability of being victimized in these crimes.

Crime-prevention programs in schools. The respondents ranked frequent instruction in crime-prevention programs for students, frequent training for teachers in instruction of crime-prevention programs, the enhancing the crime-prevention programs at the given teacher's school, establishing better methods for the administration of crime-prevention programs at the given teacher's school, enhancing the contents of the crime-prevention programs at the given teacher's school, improving teaching materials for crime-prevention programs, and introducing e-learning into the crime-prevention programs. Each item was assessed on a five-point Likert scale (1 = not proactive (necessary), 2 = little proactive (necessary), 3 = somewhat proactive (necessary), 4 = rather proactive (necessary), and 5 = very proactive (necessary)).

After the survey, researchers analyzed differences in the results according to the respondents' gender, years of work experience as a teacher, years of experience working at the present school, position or school grade taught, presence or absence of any experience being responsible for school security, and presence or absence of experience as instructor in acquiring habits and attitudes for daily life. The scores for teachers' perceptions of their students' risk of being victimized by crime and teachers' perceptions of the content and implementation of crime-prevention programs were assessed through analysis of variance (ANOVA), performed using SPSS ver. 17.0.1 J (SPSS Japan Inc., Japan). A Likert scale is fundamentally an ordinal scale and thus produces qualitative, not quantitative, data, meaning that parametric analysis, such as ANOVA, cannot be used. However, Carifio and Peria reviewed a large number of previous empirical studies and found that Likert scales are closer to interval measures, for which it is entirely valid to use more powerful parametric techniques[14]. In addition, Norman investigated the robustness of parametric statistical methods based on studies from the 1930s, indicating that there is no problem in the use of a parametric statistical method for the values measured with a Likert scale[15]. In fact, many works can be found that use ANOVA in the analysis of Likert scale data. In this study, therefore, the researchers investigated the results of Likert scale data with ANOVA.

This study was conducted with the approval of the ethics committee of the University of Tokyo (No. 18–91). To protect personal information, the questionnaire was conducted on an implied-consent basis. The respondents, by their completion of the survey, expressed informed consent, and anonymity was maintained by the respondents' act of placing the questionnaire sheet into an envelope with no identifying information and sealing it.

III. Results

Participants

The initial sample was all 683 teachers working in 26 elementary schools in 7 Japanese prefectures, and of those

teachers, 50.4% (n = 344) participated in the survey. Of those teachers, 118 teachers (34.4%) worked at ten schools located in inner cities, such as in commercial or business areas; 138 teachers (40.2%) worked at ten schools located in outer-city residential areas; and 86 teachers (25.1%) worked at six rural schools. Furthermore, 114 teachers (33.2%) had less than 10 years of experience as teachers, 144 (41.7%) had 10–30 years of experience, and 83 (24.2%) had more than 30 years of experience.

Teachers' perceptions of the risk that students may be victimized

The teachers who answered "strong risk" or "very strong risk" to the possibility that their students may be victimized were categorized as perceiving high risk; those who answered "some risk" were categorized as perceiving a moderate risk; and those who answered "not much risk" or "no risk" were grouped into the low-risk category. The following crimes were considered by more than half of the teachers as relatively high risk: abduction (59.1%), molestation (56.3%), indecent exposure (60.7%), enticement (50.4%), and online defamation and abuse (52.2%). For the following crimes, by contrast, under 40% of the respondents felt a relatively high risk of occurrence for their students: rape (33.5%), assault (35.4%), robbery and theft (36.7%), and trespassing at a student's home (35.1%) (**Table 1**).

The crimes for which the respondents perceived a high risk of victimhood among their students as victims of crimes are illustrated according to grade in **Figure 1**. It is interesting to note that more than 80% of the teachers indicated that their first- and second-grade students had a risk of abduction, whereas less than 50% of the teachers indicated a risk of abduction for fourth-, fifth-, and sixth-grade students. Concerning their fifth- and sixth-grade elementary school students, over 80% of the teachers answered that there was the risk of rape, robbery and theft, voyeurism, online crime as well as online defamation and abuse. As to the risk of becoming victimized by online crime, 89.5% of the teachers answered their apprehensive feeling about the risk for their fifth-grade students, and 98.8% of the teachers reported for their sixth-grade students. Likewise, regarding the risk of online defamation and abuse, 89.4% of the teachers answered that they felt the risk for their fifth-grade students, and 98.3% of the teachers showed anxious perception about the risk for their sixth-grade students.

Crime-prevention programs in schools

Schools' efforts to conduct crime-prevention programs for their students were judged to be "very proactive" by 10.3% and "rather proactive" by 65.9% of the teachers. These results indicated that more than three-quarters of the teachers responded that their schools had conducted constructive crime-prevention programs for students.

The teachers characterized their schools' efforts to train and support teachers in crime-prevention programs for students as "very proactive," among 7.9% of the teachers, and 55.1% considered it "rather proactive," indicating that more than 60% of the respondents considered that schools had made positive efforts to conduct intense training for teachers. By contrast, other teachers judged that their schools were "not proactive," 0.6%; "not very proactive," 5.9%; and "somewhat proactive," 30.5%. These results indicate that more than 35% of the teachers felt that their schools' training of teachers to provide students with effective crime-prevention programs was not sufficient.

More than half of the teachers (59.5%) responded that the current crime-prevention programs should be improved. Only

Table 1 Teachers' perception of the risk of crimes against students

	High		Moderate	Low	
	Very strong risk	Strong risk	Some risk	Not much risk	No risk at all
Abduction	31(9.1%)	171(50.0%)	104(30.4%)	35(10.2%)	1(0.3%)
Rape	19(5.5%)	96(28.0%)	132(38.5%)	89(25.9%)	7(2.0%)
Molestation	47(13.7%)	146(42.6%)	109(31.8%)	39(11.4%)	2(0.6%)
Indecent exposure	65(19.0%)	143(41.7%)	97(28.3%)	36(10.5%)	2(0.6%)
Enticement	30(8.7%)	143(41.7%)	113(32.9%)	56(16.3%)	1(0.3%)
Assault	26(7.6%)	95(27.8%)	123(36.0%)	90(26.3%)	8(2.3%)
Robbery and theft	14(4.1%)	111(32.6%)	122(35.8%)	91(26.7%)	3(0.9%)
Stalking	24(7.0%)	121(35.4%)	128(37.4%)	67(19.6%)	2(0.6%)
Voyeurism	26(7.6%)	132(38.6%)	112(32.7%)	69(20.2%)	3(0.9%)
Online crime	55(16.0%)	116(33.8%)	121(35.3%)	50(14.6%)	1(0.3%)
Online defamation and abuse	65(19.0%)	114(33.2%)	112(32.7%)	51(14.9%)	1(0.3%)
Trespassing at a student's home	27(7.9%)	93(27.2%)	140(40.9%)	78(22.8%)	4(1.2%)
Trespassing at school	34(9.9%)	123(36.0%)	123(36.0%)	59(17.3%)	3(0.9%)

n = 344
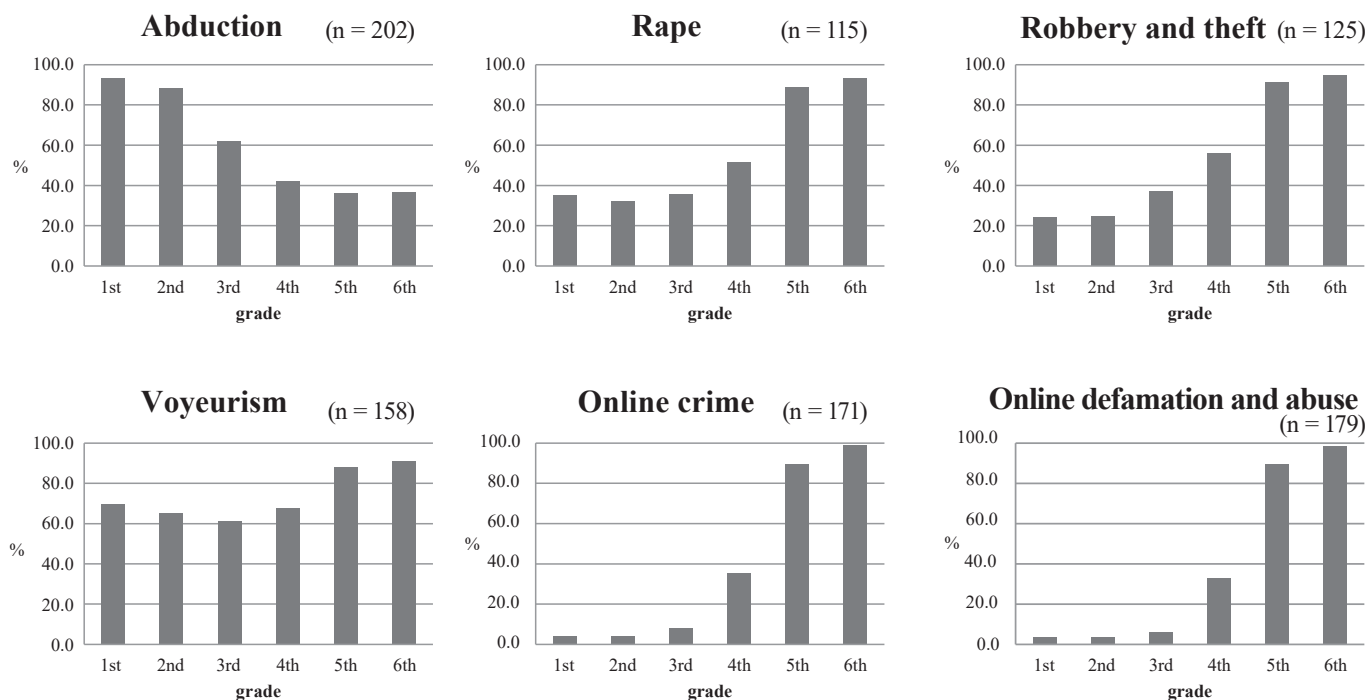
Denominators are number of teachers who recognized high risk in their students of becoming victims of these crimes (they answered "Very strong risk" or "Strong risk" in the questionnaire items concerning the risk that students may fall victim to crimes)

Figure 1 Percentage of teachers who recognized a high risk for their students to be victims of certain crimes

10.9% of the teachers considered that there was "no necessity to improve current programs" or that there was "little necessity to improve current programs."

Asked whether it was necessary to improve the teaching methods in school crime-prevention programs, 9.1% of the teachers responded that it was "very necessary," and 47.2% answered that it was "rather necessary," indicating that more than half considered improvement to be necessary.

Among the respondents, 8.2% of responded that it was "very necessary" to improve training for teachers on crime-prevention programs in schools, and 47.9% answered that it was "rather necessary." By contrast, 15.0% of the teachers considered that it was "little necessary" or "not necessary" to improve training.

The teachers judged improvements to teaching materials for crime-prevention programs in schools to be "very necessary," 6.7%, and "rather necessary," 46.9%. By contrast, 15.0% of the teachers considered it "little necessary" or "not necessary" to improve teaching materials for crime-prevention programs.

Asked to judge the necessity of introducing e-learning systems for crime-prevention programs in schools, 5.1% of the respondents answered that it was "very necessary," and 34.2% considered it to be "rather necessary." By contrast, 29.4% of the teachers thought this was "little necessary" or "not necessary" (**Figure 2**).

From ANOVA for the teachers' perception scores of the risk that their students might be victimized by crime and concerning their perceptions on the content and implementation of crime-prevention programs in their schools, statistically significant differences were found for only two characteristics, namely school location and length of teaching experience.

Comparison by school location

Statistically significant differences according to school locations were found in the teachers' perceptions for the risk to their students for 9 of 13 crimes: indecent exposure, assault, robbery and theft, stalking, online crime, and online defamation and abuse (for these crimes, $p < 0.01$) and, in addition, molestation, trespassing at the student's home, and trespassing at school (for these crimes, $p < 0.05$). Additionally, multiple comparisons using the Scheffe test revealed that the teachers' risk perceptions in schools in commercial areas were judged significantly more than those in schools in rural areas for molestation, indecent exposure, assault, robbery and theft, stalking, online crime, and online defamation and abuse ($p < 0.05$). In addition, this examination demonstrated that the teachers' risk perceptions for residential area schools was judged significantly higher than that for rural schools for assault, online crime, online defamation and abuse, trespassing at a student's home, and trespassing at school ($p < 0.05$) (**Table 2**).

The ANOVA indicated no significant differences in scores concerning the teachers' perceptions of "the content and implementation of crime-prevention programs" or "frequency of teacher training" among the three school locations regarding school locations.

Comparison according to years of teachers' experience

Only 1 of 13 crimes had significant differences among the three groupings of the teachers by experience. Multiple comparisons using the Scheffe test demonstrated that the teachers' risk perception for victimization by online defamation and abuse was significantly greater in the group with under 10 years of experience than in the group with more than 30 years of experience ($p < 0.05$) (**Table 3**).

Through ANOVA, statistically significant differences were found among the three groups of the teacher experience levels
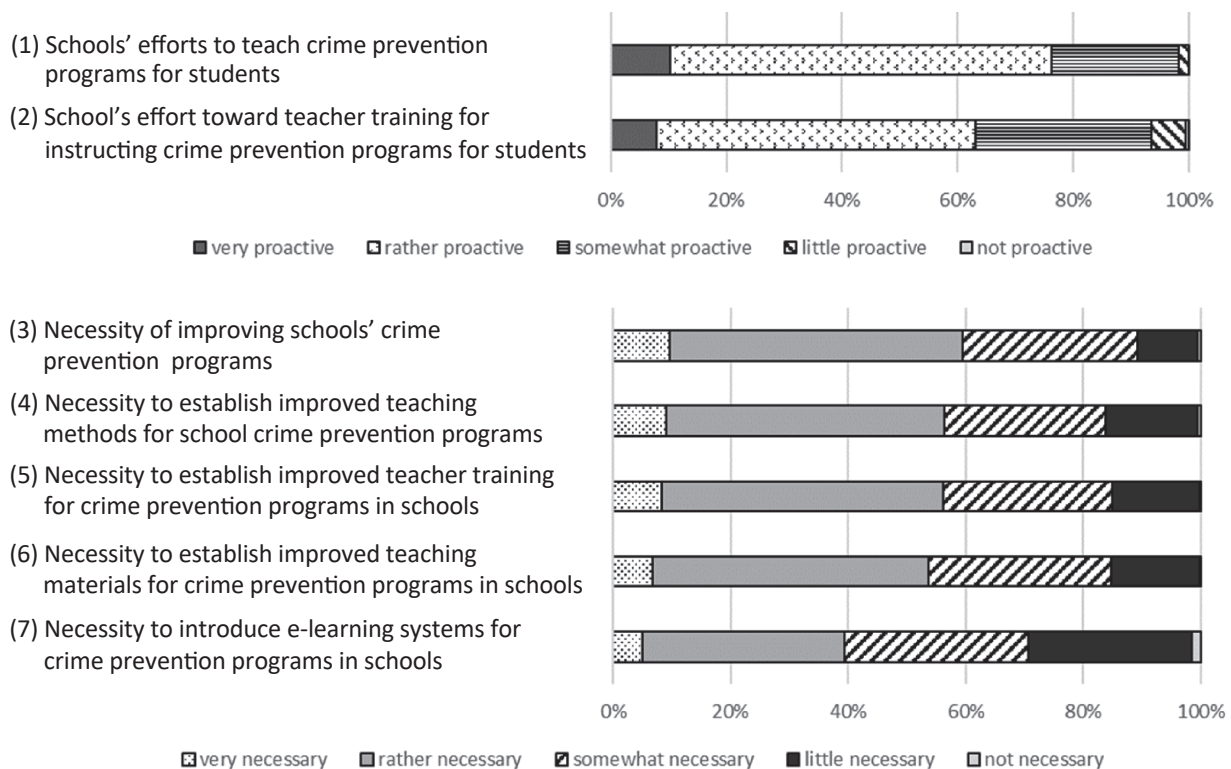

Figure 2 Teachers' perceptions of crime prevention programs at their schools

Table 2 Results of comparison of teachers' risk perceptions according to school location

	(1) Commercial or business areas	(2) Residential areas	(3) Rural areas	Multiple comparisons
Abduction	2.6 (0.83)	2.6 (0.82)	2.4 (0.74)	
Rape	2.1 (0.95)	2.2 (0.94)	1.9 (0.83)	
Molestation[*]	2.7 (0.90)	2.6 (0.85)	2.4 (0.89)	†(1)–(3)
Indecent exposure[**]	2.8 (0.95)	2.7 (0.89)	2.4 (0.88)	†(1)–(3)
Enticement	2.4 (0.88)	2.5 (0.90)	2.3 (0.81)	
Assault[**]	2.3 (0.93)	2.2 (0.96)	1.8 (0.95)	†(1)–(3), †(2)–(3)
Robbery and theft[**]	2.2 (0.83)	2.2 (0.94)	1.8 (0.83)	†(1)–(3)
Stalking[**]	2.4 (0.91)	2.3 (0.84)	2.0 (0.85)	†(1)–(3)
Voyeurism	2.4 (0.94)	2.3 (0.92)	2.3 (0.85)	
Online crime[**]	2.7 (0.89)	2.6 (1.00)	2.2 (0.85)	†(1)–(3), †(2)–(3)
Online defamation and abuse[***]	2.6 (0.96)	2.7 (0.93)	2.2 (0.91)	†(1)–(3), †(2)–(3)
Trespassing at a student's home[*]	2.2 (0.93)	2.3 (0.91)	2.0 (0.90)	†(2)–(3)
Trespassing at school[*]	2.4 (0.92)	2.5 (0.95)	2.1 (0.79)	†(2)–(3)

(1) Commercial and business area: n = 118, (2) Re sidential area: n = 138, (3) Rural area: n = 85, Total: n=341

ANOVA *: p<0.05, **: p<0.01, ***: p<0.001

Results are given as means (standard deviations), multiple comparison using the Scheffe test †: p<0.05

Table 3 Results for risk perception according to teachers' years of experience

	(1) Under 10 years	(2) 10–30 years	(3) Over 30 years	Multiple comparisons
Abduction	2.6 (0.89)	2.6 (0.79)	2.5 (0.72)	
Rape	2.1 (1.00)	2.1 (0.88)	2.0 (0.86)	
Molestation	2.6 (1.00)	2.5 (0.86)	2.6 (0.76)	
Indecent exposure	2.7 (0.98)	2.7 (0.92)	2.7 (0.85)	
Enticement	2.5 (0.91)	2.4 (0.86)	2.3 (0.85)	
Assault	2.2 (1.05)	2.0 (0.93)	2.2 (0.90)	
Robbery and theft	2.2 (0.91)	2.1 (0.90)	2.1 (0.82)	
Stalking[§]	2.4 (0.92)	2.3 (0.84)	2.1 (0.88)	
Voyeurism	2.3 (0.97)	2.4 (0.87)	2.3 (0.91)	
Online crime	2.6 (0.96)	2.5 (0.91)	2.3 (0.96)	
Online defamation and abuse[*]	2.8 (1.00)	2.5 (0.92)	2.4 (0.99)	†(1)–(3)
Trespassing at a student's home	2.1 (1.01)	2.3 (0.87)	2.2 (0.85)	
Trespassing at school	2.4 (0.94)	2.4 (0.94)	2.3 (0.84)	

(1) Under 10 years: n = 114, (2) 10–30 years: n = 144, (3) Over 30 years: n = 83, Total: n=341

ANOVA §: p<0.10, *: p<0.05

Results are given as means (standard deviations), multiple comparison using the Scheffe test †: p<0.05

regarding the teachers' judgment of the suitability of the frequency of schools' crime-prevention programs. The frequency of the effort of the school to teach crime-prevention programs to students (p<0.05) and the frequency of the effort of the school for teachers' training to teach crime-prevention programs to students (p<0.05) were judged by teachers with less than 10 years of experience as less sufficient than by those who with more than 10 years of experience (**Table 4**).

IV. Discussion

Children have been victims of terrible crimes in Japan in recent years, such as the abduction and murder of girls in Hyogo prefecture in September 2014, Chiba prefecture in March 2017, and Niigata prefecture in May 2018. These crimes fit a similar profile, in that the victims were alone and had no protecting adults nearby. Viewed together, these affairs indicate the importance of developing risk prevention and crime avoidance in children.

This found that over 50.0% of the respondents felt a strong or very strong risk for their students to be victimized through crimes of abduction, molestation, indecent exposure, enticement, and online defamation and abuse. Recent Japanese data indicate that nearly one-third of abductions that victimized children were sexually motivated. Additionally, almost half of molestations and indecent exposures victimized children[1]. These facts are consistent with the recognition of the risk to their students of victimization among teachers.

Abduction and enticement, in particular, have a central place in crime-prevention programs because of their extreme danger for children. Finkelhor et al. indicated that approximately 50% of all attempted non-family abductions are of children who attend elementary-school (between the ages of 6 and 12 years), indicating that elementary-school students are in much greater danger of abduction than people at other ages[16]. Finkelhor and Ormond also reported that much of stranger kidnaping is related with sexual assault, especially where the victims are girls[17]. It should be noted that the National Police Agency of Japan reported that 23 children under 13 years old were abducted for sexual reasons in 2016[1], which means that one child under 13 years old is abducted for sexual reasons every 2 weeks in Japan. Considering the serious nature and potentially tragic consequences of child abduction, minimizing the risk of child abduction through crime-prevention programs is an urgent priority.

More than half of the respondents in this study indicated that they considered it to be a strong risk for their students to be victimized by sexually motivated crimes such as abduction and enticement. The overwhelming majority, 80% of the teachers considered the students in the first and second grades to be at high risk of abduction. By contrast, less than 50% of the respondents considered students in the fourth, fifth, and sixth grades to be at a high risk.

Deguchi and Yoshimura reported from their study of parents'

Table 4 Results for perception of implementation of crime prevention programs according to teachers' years of experience

	(1) Under 10 years	(2) 10–30 years	(3) Over 30 years	Multiple comparisons
1. Schools' efforts to teach crime prevention programs for students*	2.7 (0.58)	2.9 (0.65)	2.9 (0.56)	†(1)–(2), †(1)–(3)
2. Schools' efforts toward teacher training for instructing crime prevention programs for students*	2.5 (0.76)	2.7 (0.78)	2.7 (0.61)	†(1)–(2), †(1)–(3)
3. Necessity of improving schools' crime prevention programs	2.6 (0.78)	2.5 (0.87)	2.6 (0.81)	
4. Necessity to establish improved teaching methods for school crime prevention programs	2.4 (0.90)	2.5 (0.89)	2.6 (0.83)	
5. Necessity to establish improved teacher training for crime prevention programs in schools	2.5 (0.85)	2.5 (0.86)	2.5 (0.86)	
6. Necessity to establish improved teaching materials for crime prevention programs in schools	2.3 (0.80)	2.5 (0.88)	2.6 (0.80)	
7. Necessity to introduce e-learning systems for crime prevention programs in schools	2.1 (0.96)	2.1 (0.91)	2.3 (0.92)	

(1) Under 10 years: n = 114, (2) 10–30 years: n = 144, (3) Over 30 years: n = 83, Total: n=341

ANOVA *: p<0.05

Results are presented as means (standard deviations), multiple comparison using the Scheffe test †: p<0.05

anxiety that their children might become victims of crimes reported that parents felt greater anxiety for children in lower grades[18]. This is similar to our results indicating that the teachers at elementary schools have greater anxiety regarding abduction concerning their students in the lower grades than that concerning students in the higher grades.

However, the teachers appeared to have greater misgivings regarding the fifth- and sixth-grade students and online crime. At the current time, many Japanese elementary-school students routinely use personal computers at home, and many also own cellphones or smartphones. According to a survey on communication trends in Japan conducted by the Ministry of Internal Affairs and Communications in 2017, 73.6% of elementary-school students reported having used the internet. In detail, 27.5% of elementary-school students had connected using a PC, 32.4% had connected using smartphones, and 32.7% had used tablets[19]. These and our results indicate that more than half of the teachers surveyed feel an immediate necessity for the establishment of crime-prevention programs for higher-grade students to prevent harm through online crime.

The results of our study demonstrated the teachers' anxieties varies according to the students' grade in school. As noted above, the teachers perceive a higher risk of abduction for first- and second-grade students than for students in higher grades. By contrast, the teachers felt more anxiety regarding rape, robbery and theft, voyeurism, online crime, and online defamation and abuse, as to students in higher grades than that for students in lower grades. These results indicate that in the study of anxiety concerning crimes targeting students, the type of crime, and the age or grade of the student should be considered.

Comparison of school locations indicated that the teachers working in commercial areas had higher risk perception of their students' possible victimhood than the teachers in rural areas did. Gallagher et al. demonstrated that the victimization rate of all incidents of child sexual abuse and abduction in the United Kingdom, including indecent exposure, touching, and abduction by strangers, was greatest in students attending inner-city schools (victim students: 10.6%, non-victim students: 89.4%), and this rate dropped in outer-city areas (victim students: 7.4%, non-victim students: 92.6%), with the lowest rate among students at rural small-town schools (victim students: 4.6%, non-victim students: 95.4%)[20]. Although the differences in the frequency of victimization of children according to area has not yet been detailed in Japan, a review of past studies on urban space and crimes in Japan has demonstrated that violent crimes in general occur more frequently in urban areas than they do in towns and villages, and thieves appear more often in densely populated places, such as commercial areas and urban residential areas[21]. In addition, previous research found that there were no significant differences in anxiety about crime in different types of locations. However, regarding concrete anxieties such as fear of a frightening person or fear of a violent act, those living in residential/commercial mixed areas were statistically more likely to respond than those in rural areas[22]. These facts may indicate one cause of the observation that teachers in residential areas have a greater risk perception of the possibility that their students will be victimized.

Our study found that the teachers at schools located in rural areas were less concerned that their students would be victimized by assault, online crime, online defamation and abuse, trespassing at a student's home and trespassing at school than the teachers at schools in residential areas were. The researchers considered this

result partly consistent with the results of the studies mentioned above. Even so, we cannot disregard the probability that students in rural areas may also become crime victims. In fact, there have been fewer abductions or homicidal assaults that have occurred in rural areas in Japan; these would include the missing child in the town of Kumatori, Osaka, in 2003 and the child homicide in the city of Imaichi, Tochigi, in 2005. These incidents indicate that teachers should develop their perception of the risk of their students' victimization in all types of school locations.

No differences were found concerning years of teaching experience regarding the degree of perception of crime risk, with the exception of perception of risk for online defamation and abuse. The teachers with less than 10 years of experience had stronger risk perceptions for online defamation and abuse than the teachers with more than 30 years of experience. In Japan, according to the communication utilization trend survey administered by the Ministry of Internal Affairs and Communications, 22.4% of elementary-school students used social networks in 2017[23]. In 2012, Tsuda et al. found that only 9.1% of elementary-school students who had used social networks (male: 3.5%, female: 14.4%). This is a remarkable increase in the utilization rates of social networks among children. One reason for the higher risk perceptions of online-associated crimes among the teachers with professional experience of less than 10 years may be that younger teachers have better knowledge of social networks and closer, more frequent contact with them than older teachers do.

No studies have examined teachers' perceptions of the risk of their elementary-school students of being victimized by crime. Additionally, the satisfaction of Japanese elementary school teachers with online-associated crime-prevention programs in their schools remains unknown. This study is the first to investigate these.

This study demonstrated that many teachers are quite concerned about the possibility of abduction, molestation, and other crimes, whereas they have a less acute perception of the possibility of rape, assault, or robbery. Teachers would do well to consider the tragic results and negative impacts of rape and assault on children, and even if they are committed rarely, teachers should be sufficiently cautious about them.

Additionally, ceaseless work should be done by teachers everywhere to administer to their students sufficient crime-prevention education to ensure their competence to protect themselves from heinous crimes. Tutty demonstrated that prevention programs for elementary-school students to prevent sexual abuse (including crimes committed by strangers) could improve students' crime-prevention knowledge[24]. Moreover, that researcher found that the active involvement of parents and teachers was essential for these programs. In their study of body-safe training, Wurtele et al. demonstrated that students taught by both parents and teachers demonstrated greater knowledge gains for appropriate touch and personal safety skills than students taught by teachers or parents alone. Their study indicated the importance that teachers and parents be involved in crime prevention[25]. Thus, the proactive administration of crime-prevention programs by teachers with sufficient recognition of the necessity of such programs will play an important role in promoting the competence of their students in maintaining their safety against crimes. Furthermore, the appropriate cooperation of school teachers in elementary schools with students' parents can more effectively enhance crime-prevention programs.

Here, training teachers to present quality crime-prevention

programs for their students is essential. In a study of safety education at elementary schools, Kusumoto indicated that teachers who take safety education training can improve their own crisis management, indicating that teachers who receive the training can proactively teach safety education, such that students can come to understand the importance of protecting their own safety[26]. Kenny et al. reviewed a number of crime-prevention programs intended to prevent sexual abuse of students, including by strangers, in the United States, and they concluded that educating teachers and support staff to teach such programs in elementary schools was essential, and teachers' understanding of the programs and perceptions regarding crime-prevention should be developed[27]. Walsh et al., in a meta-analysis of programs for the prevention of sexual abuse in the United States, found that improving teachers' knowledge and perceptions regarding crime is essential for providing elementary-school students with crime-prevention programs[28]. These studies indicate that the establishment of effective training for teachers to acquire appropriate risk perception of crimes and sufficient teaching skills is indispensable for the provision of effective crime-safety programs in elementary schools.

Our study found that the teachers with less than 10 years of experience perceived more risk of online defamation and abuse than those with more than 30 years. Considering that 22.4% of Japanese elementary-school students were reported to have used a social network in 2017, the necessity of appropriate crime-prevention programs for online safety is evident. Aoyama et al. reported that 10.5% of elementary-school girls in Japan answered that they had experienced online bullying[29]. Additionally, according to a report by the National Police Agency, the number of victims who were children, including elementary-school children, on social internet sites has been increasing (there were 34 victims of 12 years old or younger in 2013 and 71 in 2016), and the number of victims of child prostitution and child pornography have also been increasing[30]. These facts indicate that teachers with long professional experience should provide their students with programs to prevent online crimes.

There were statistically significant differences between the teachers with less than 10 years of experience and the teachers with more than 30 years regarding their schools' crime-prevention programs and the training for teachers to carry out those programs. Similarly, in a previous study of teachers' perceptions of fire prevention and safety education, a difference was indicated regarding perceptions of fire protection education according to teachers' years of experience and participation in disaster-prevention education training[13]. That study, by Tatebe and Yoshioka, found that teachers with less experience considered that their schools' evacuation drills were insufficient. Our results were similar to those.

One reason why teachers with less experience considered the crime-prevention programs to be less adequate may related to recently developed training for teachers concerning crime and disaster in Japanese colleges and universities. For instance, after the tragic incident of Ikeda Elementary-School at Osaka Kyoiku University in 2001, several colleges and universities have begun to establish educational curricula for safety education, including disaster prevention, crime-prevention, and emergency crisis measures in their education curricula. In 2000, 11.8% of colleges and universities had safety education in their curricula, which increased to 23.2% in 2002. In addition, the proportion of Japanese teachers studying education at colleges and universities who responded positively to the item "Teacher training universities should make education and training related to school safety essential" increased from 17.4% in 2000 to 51.9% in 2002[31].

Moreover, in response to various crimes at schools, including what happened at Ikeda Elementary-School, and the repeated victimization of students by criminal activity and disasters, the Japanese government updated its School Health Law in 2009 to a new School Health and Safety Law[32]. This law prescribes that every school must have safety plans for disasters, crimes, and other emergencies. Additionally, it requires all schools to provide students with safety education. This will also accelerate the development of safety education in colleges and universities.

These changes in education at colleges and universities may influence new teachers with less experience to think more proactively and urge schools to make a greater effort to instill crime-prevention principles in students and to train teachers to administer safety education. Additionally, the new law may be more clearly understood by newer teachers than by teachers with more professional experience, resulting in a greater recognition of safety education among the teachers with less professional experience.

This study indicated that less experienced teachers tend to perceive greater importance for crime-prevention programs and to feel that their training for delivering crime-prevention programs was insufficient. Further investigation is required to indicate why teachers with less professional experience considered that content of crime-prevention programs and the training was insufficient for them.

V. Conclusion

This study examined Japanese elementary-school teachers' perception of the risk that their students may fall victim to certain crimes and how far they are satisfied with crime-prevention programs being undertaken in their schools.

In this study, many teachers were aware of the risk of abduction, molestation, and other crimes for their students. By contrast, fewer teachers considered rape, assault, or robbery and theft to be a risk. Additionally, this study indicated differences in teachers' risk perception according to the location of their schools. This study indicated that the perception of risk of crime to their students among elementary-school teachers in rural areas is less than that for those in commercial and residential area.

Moreover, this study demonstrated that the length of teachers' experience affects their perception of their students' risk of victimization online, and it was indicated that less experienced teachers tended to feel a greater necessity of improving their crime-prevention programs' content and the associated training.

The results of this study will contribute to the development of crime-prevention programs for schools and associated training for teachers. It can be of assistance for the development of measures to upgrade risk perception of elementary-school teachers to keep their students safe from a variety of crimes.

References
1) National Police Agency: Crime situation in 2016. 2017. Available at: http://www.npa.go.jp/toukei/seianki/h28hanzaizyousei.pdf. Accessed April 19, 2018 (in Japanese)
2) Matsumoto M, Kato T, Baba Y et al.: A cross-sectional survey of local neighborhood watch scheme participants concerning the risk of "stranger danger" to children on their way to and

from school. School Health 1: 9–14, 2005

3) Fujii Y: A developmental study on crime prevention consciousness in elementary school students. The Japanese Journal of Developmental Psychology 21: 375–385, 2010 (in Japanese)

4) Nakasako Y, Kanazaki H: Practice for prevention of crime on the street for lower grades of elementary school. Bulletin of Center for Educational Research and Training Faculty of Education Kumamoto University 34: 83–88, 2017 (in Japanese)

5) Weatherley R, Siti Hajar AB, Noralina O et al.: Evaluation of a school–based sexual abuse prevention curriculum in Malaysia. Children and Youth Services Review 34: 119–125, 2012

6) Brenick A, Shattuck J, Donlan A et al.: Empowering children with safety-skills: An evaluation of the kidpower everyday safety-skills program. Children and Youth Services Review 44: 152–162, 2014

7) Rispens J, Aleman A, Goudena P: Prevention of child sexual abuse victimization: A meta-analysis of school programs. Child Abuse & Neglect 21: 975–987, 1997

8) MacIntyre D, Carr A: Prevention of child sexual abuse: Implications of programme evaluation research. Child Abuse Review 9: 183–199, 2000

9) Roberts JA, Miltenberger RG: Emerging issues in the research on child sexual abuse prevention. Education & Treatment of Students 22: 84–102, 1999

10) Ministry of Education, Culture, Sports, Science and Technology: The plan for promotion of school safety. 2014. Available at: http://www.mext.go.jp/a_menu/kenko/anzen/__icsFiles/afieldfile/2012/05/01/1320286_2.pdf. Accessed November 19, 2018 (in Japanese)

11) Uchida T, Inoue A: Research on teachers' recognition of guidance of students personal work and actual situations: In order to conquer the students' severe problems during their early stage of life. Bulletin of Kyoto University of Education 110: 75–92, 2007 (in Japanese)

12) Hoshina Y, Yatsuka A, Matsuda T: A survey of teacher 's demand for "information study" curriculum at elementary school level. Japan Society for Educational Technology 28: 221–224, 2004 (in Japanese)

13) Tatebe K, Yoshioka T: Research on teachers' idea of fire prevention education and teachers' ability to prevent fire. Transactions of AIJ. Journal of Architecture, Planning and Environmental Engineering 634: 2599–2604, 2008 (in Japanese)

14) Carifio J, Perla R: Resolving the 50-year debate around using and misusing Likert scales. Medical Education 42: 1150–1152, 2008

15) Norman G: Likert scales, levels of measurement and the "laws" of statistics. Advances in Health Sciences Education 15: 625–632, 2010

16) Finkelhor D, Hotaling G, Asdigian N: Attempted non-family abductions. Child Welfare 74: 941–955, 1995

17) Finkelhor D, Ormond R: Kidnapping of juveniles: Patterns from NIBRS. Bulletin. Washington, DC: U.S. Department of Justice, Office of Justice Programs, Office of Juvenile Justice and Delinquency Prevention, 2000

18) Deguchi H, Yoshimura H: Influence of distribution of buildings and street characteristics on the parents' fear of crime against elementary school children. Transactions of AIJ. Journal of Architecture, Planning and Environmental Engineering 80: 537–546, 2015 (in Japanese)

19) Ministry of Internal Affairs and Communications: The points of survey on usage trend of communication. 2017. Available at: http://www.soumu.go.jp/main_content/000558952.pdf. Accessed November 19, 2018 (in Japanese)

20) Gallagher B, Bradford M, Pease K: Attempted and completed incidents of stranger-perpetrated child sexual abuse and abduction. Child Abuse & Neglect 32: 517–528, 2006

21) Kinashi M: Crime hazards extraction of the urban space based on the literature review. Gunma College of Technology Review 32: 91–97, 2014 (in Japanese)

22) Amemiya M, Shimada T: The relationship between residents' fear of crime and spatial compositions in urban areas: A basic study of community-based urban planning for crime prevention. Papers on City Planning 44: 295–300, 2009 (in Japanese)

23) Tsuda A, Kimura R, Mizuno M et al.: Survey of Internet use among elementary and junior high school students: Differences in recognition between the child and their parents. Journal of the Tsuruma Health Science Society 39: 73–79, 2015

24) Tutty LM: Child sexual abuse prevention programs: Evaluating who Do you Tell. Child Abuse & Neglect 21: 869–881, 1997

25) Wurtele S, Gillispie E, Currier L et al.: A comparison of teachers vs. parents as instructors of a personal safety program for preschoolers. Child Abuse & Neglect 16: 127–137, 1992

26) Kusumoto K: The activities of elementary schools and kindergartens for school safety. Shitennoji University Journal 55: 141–148, 2013 (in Japanese)

27) Kenny MC, Capri V, Ryan EE et al.: Child sexual abuse: From prevention to self-protection. Child Abuse Review 17: 36–54, 2008

28) Walsh K, Zwi K, Woolfenden S et al.: School-based education programs for the prevention of child sexual abuse: A Cochrane systematic review and meta-analysis. Research on Social Work Practice 28: 1–23, 2015

29) Aoyama I, Fujikawa D, Igarashi T: An incident antecedent to cyberbullying trouble, its perceived severity, confidence to deal, and coping behaviors among elementary and junior high school students. Japan Society for Educational Technology 41(Suppl.): 189–192, 2018 (in Japanese)

30) National Police Agency: Current situation and measures of incidents caused by community sites in the first half of 2017. 2017. Available at: https://www.npa.go.jp/cyber/statics/h29/H29_siryou.pdf. Accessed May 15, 2019 (in Japanese)

31) Negishi C: The school safety education programs for faculty of education in national universities. Research on School Education Connected with Society (2) 277: 15–20, 2014 (in Japanese)

32) Ministry of Education, Culture, Sports, Science and Technology: School Health and Safety Law. Available at: https://elaws.e-gov.go.jp/search/elawsSearch/elaws_search/lsg0500/detail?lawId=333AC0000000056. Accessed July 1, 2019 (in Japanese)

Name:
Takayasu Inoue

Affiliation:
Environmental Research Center, The University of Tokyo

Address:
7-3-1 Hongo, Bunkyo-ku, Tokyo 113-0033 Japan

Brief Biographical History:
• 2007- Research Fellow, Environmental Research Center, The University of Tokyo
• 2011- Visiting Researcher, Environmental Research Center, The University of Tokyo

Main Works:
• Inoue T. Karima R, Harada K: Bilateral effects of hospital patient-safety procedures on nurses' job satisfaction, International Nursing Review 64: 437-445, 2017

Membership in Learned Societies:
• Japanese Association of Industrial / Organizational Psychology
• Japan Ergonomics Society
• Japan Industrial Management Association