

*The Experiences of Classmates Surrounding Incidents of 'Vomiting' in Schools:
An Investigation Using Scenario-Based Retrospective Among University Students*

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The Asian Conference on Education 2024
Official Conference Proceedings

Abstract

In school life, the majority of classroom and other group activities take place. When an injury or illness occurs, it is necessary to give guidance and consideration not only to the injured or ill, but also to students other than the injured or ill. The purpose of this study is to focus on the frequent occurrence of vomiting at school and to determine how classmates other than the student who vomited might feel and attempt to act. A questionnaire survey of 246 university students was conducted on a fictitious case using the recall method. Most elementary school students were averse to vomiting and often left the scene, whereas middle school students tended to express concern for the vomiting student and actively try to assist him or her. The emotions and behaviors toward injury and illness differed between elementary school students and junior high school students. It was suggested that appropriate instruction differed depending on the development of the student. Appropriate guidance should be considered for each of these differences.

Keywords: Injury or Illness Occurs, Vomiting, Classmates' Perceptions, Instructional Considerations

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Introduction

School life and educational activities, where children learn and experience, are based on a safe and secure environment (Ministry of Education, Culture, Sports, Science and Technology, 2019). One of the most important areas of school health and safety is response to injuries and illnesses during school educational activities. In the event of an injury or illness at school, each school prepares a crisis management manual and conducts training and drills with the aim of ensuring a smooth and appropriate response by teachers and staff in the event of a hazard under school management. In preparing the manuals, schools are required to specifically consider crisis management responses in three stages (before, during, and after the crisis) according to the school's actual situation, based on materials such as "School Crisis Management Manual Preparation Guide" (Ministry of Education, Culture, Sports, Science and Technology, 2018) and "Safety Education at Schools to Foster 'Ability to Live'" published by the Ministry of Education, Culture, Sports, Science, and Technology (Ministry of Education, Culture, Sports, Science and Technology, 2019). We believe that clearly stating the points to keep in mind and their specific contents will lead to useful guidelines in all educational settings throughout the country. In particular, detailed procedures for the disposal of vomit and soiled materials are provided for teachers to follow in order to prevent infectious diseases (DICT Logistical Support Team, Japanese Society of Environmental Infection Control, 2024). In fact, a case of norovirus gastroenteritis has been reported, in which vomitus was considered to be the source of infection, and appropriate treatment is required (Kimura et al., 2012; Shinkawa et al., 2004).

The Importance of Guidance and Special Considerations for Classmates When an Injury or Illness Occurs

However, the majority of classroom and other group activities in a school setting require guidance and special considerations: both the affected in cases of illness and injury, as well as other students.

It is noted that the main motivation for injured children to return to school is to be reunited with friends (Jones et al., 2022). A major injury or illness at school (e.g., vomiting) may be a negative experience for the injured or ill person that attracts the attention of others, and anxiety about negative feelings from friends may be considered. Therefore, it is necessary to provide appropriate guidance to classmates so that the injured child can return to the group without resistance.

Thus, in the event of an injury or illness, teachers do not only deal with the injured or ill child themselves, but they must also make special consideration toward the psychological burden on other students. Existing manuals for dealing with injuries and illnesses include items such as "first aid for the injured and illness" and "cooperation between teaching staff and medical institutions" as well as "response for other students." However, the guidance and special consideration to be provided to other students and how to proceed in dealing with them are currently left to the discretion of each teacher as tacit knowledge. When considering classroom management and psychological care for students after the occurrence of an injury or illness, clarification of the points and specific details of guidance and special consideration for students other than the injured or ill student is important. Considering that injuries and illnesses during group activities can occur in any area or school, guidance and special consideration for students other than those who are injured or ill at the time of an injury or illness is an essential perspective.

Therefore, the guidance and special consideration for students other than those who are injured or illness needs sufficient clarification, including in manuals and reference materials prepared to guide it. It is noted that an interview survey of school nurse teachers analyzed elementary and junior high school students' expressions regarding their own complaints of injury and illness (Kamezaki & Ogitsu, 2018). They noted that expressions regarding injury and illness differed between elementary and junior high school students, and that the responses of school nurse teachers were characterized differently depending on school level. Specifically, elementary school nurse teachers responded in a manner that elicited the children's understanding, while the junior high school nurse teachers made the students think and elicited understanding and coping methods for the symptoms and other problems (Kamezaki & Ogitsu, 2018). Thus, the guidance required of teachers will conceivably differ depending on how students perceive the injury or illness. Therefore, clarifying how students feel and try to act in situations where injuries or illnesses of classmates occur during group activities is necessary to consider the appropriate guidance and special consideration to provide.

Purpose of This Study

Based on the above, this study conducted two major surveys among college students. The primary focus was on the second survey, in which participants were presented with hypothetical scenarios of injuries and illnesses that could occur in school settings. They were asked to respond to these scenarios as if they were elementary or junior high school students. The first survey, which was supplementary, asked students about injuries and illnesses they had experienced during group activities in elementary and junior high school. Both surveys relied on the university students' recollections. Although it would be preferable to ask elementary and junior high school students, asking them about their experiences directly related to their current school life would be psychologically burdensome. Despite its limitations, advantages to targeting college students exist. For instance, the large number of subjects is suitable for analyzing general trends, and university students who have been out of compulsory education for several years can look back on their elementary and junior high school days calmly and are likely to be able to objectively evaluate the situation at that time (Watanabe, 2010). Therefore, this study conducts a survey of university students and exploratively examines the feelings and behaviors of students during the occurrence of injuries and illnesses in group situations.

Methods

Preliminary Investigation

A total of five elementary school teachers were interviewed for the purpose of creating a fictitious case study of possible injuries and illnesses in a school setting. The questionnaire for this survey was developed by collecting examples of guidance and special consideration for students other than the injured or ill student at the time of the injury or illness.

Main Fieldwork

Participants

A total of 342 university students from two universities in the Tokai region of Japan were the study surveyed. A total of 246 valid responses were received, with a mean age of 20.3 years. In July 2023, a request for survey cooperation was made in a class taught by the second author. The survey was conducted using a Google Forms questionnaire, which was completed in the form of a web-based response.

Measures

(1) Basic Attributes

Respondents were asked for gender and age as basic attributes.

(2) Experience in Injury/Illness Outbreak Scenarios

Respondents were asked whether they had experienced any outbreaks of injuries or illnesses experienced in elementary or junior high school settings.

(3) Virtual Casualty Occurrence Scenarios

We set up hypothetical situations of commonly occurring injuries and illnesses in a school setting, referring to a preliminary survey. Specifically, we made the following statement: “You are a classmate of A in the second grade of elementary school. One day, while listening to the teacher in class, A vomited.” “You are a classmate of C in the eighth grade in middle school. One day, while listening to the teacher in class, C vomited.” “You are a classmate of B in the sixth grade of elementary school. One day, while listening to the teacher in class B wet himself.” The respondents were asked to respond by writing freely about how they felt and what actions they thought they would take in response to the event. This paper analyzes the results of a hypothetical injury/illness occurrence scene task for vomiting scenes (A and C).

Data Analysis

The data from free descriptions were categorized using the categorization technique based on the KJ method (Kawakita, 1967) with public health nurses, who were both involved in this study as practitioners. The KJ method is a categorization technique devised by Jiro Kawakita, which aims to discover how meaningful connections can be made from heterogeneous data, or to generate new ideas. Labels with similar content in participants’ free-text responses were grouped into small groups to generate subcategories (Kawakita, 2017).

Human Subjects Approval Statement

Approval was granted by "the Ethical Review of Research Involving Human Subjects" by the Ethical Review Committee of the Graduate School of Sport Sciences of Chukyo University. (No.: 2023-009).

Results

1) Elementary School, Case of Vomiting

About “How do you feel?”

First, free-text responses to the question “How do you feel?” were labeled, resulting in 261 labels. The classification of these 261 labels using the aforementioned analysis method is summarized in Table 4. As shown in Table 3, a total of 21 minor, 10 medium, and four large groups were extracted. Of the 261 labels, 255 were classified into these groups, while the remaining six were deemed unclassifiable. Next, the results of our analysis for each large group are outlined in Table 4. Minor, medium, and large groups are denoted by {}, <, and [], respectively.

Table 1: Elementary School Vomiting Scene (feeling)

large groups	medium groups	Minor groups	Total(n)	(%)
		{Unpleasant}	24	(9.4)
	<Disgust>	{Dirty, disgusting}	56	(22.0)
		{Disdain}	2	(0.8)
[Negative]	<Fear and Anxiety>	{Anxiety, fear, and confusion}	8	(3.1)
		{Complaints of poor physical condition}	25	(9.8)
	<Uncomfortable>	{Awkward/Embarrassing}	5	(2.0)
		{Increase psychological distance}	6	(2.4)
		{Wanting to leave, Not wanting to see}	9	(3.5)
[Empathy and Assistance-oriented]	<Compassion>	{Assistance-oriented}	3	(1.2)
		{Concern}	46	(18.0)
	<Empathy/Sympathy>	{Sympathy/Compassion}	8	(3.1)
	<Interesting>	{Interesting}	2	(0.8)
	<Surprise>	{Surprise}	41	(16.1)
[Others]	<Doubt>	{Doubt}	4	(1.6)
	<Nothing in Particular>	{Description of facts}	2	(0.8)
		{Nothing in particular}	1	(0.4)
		{Concern, Wanting to leave}	1	(0.4)
		{Concern, Dirty}	7	(2.7)
[Ambivalence]	<Ambivalence>	{Concern, fear}	2	(0.8)
		{Concern, Compassion}	2	(0.8)
		{Concern, Feeling sick yourself}	1	(0.4)

About “What behavior do you feel like engaging in?”

Next, free-text responses to the question “What behavior do you feel like engaging in?” were labeled, resulting in 261 labels. The classification of 247 of these labels, based on the aforementioned analysis method, is summarized in Table 4. We extracted 22 minor groups, 14 medium groups, and five major groups. All 247 labels were classified into these groups, with none deemed unclassifiable. Minor, medium, and large groups are denoted by {}, <, and [], respectively.

Table 2: Elementary School Vomiting Scene (behavior)

large groups	medium groups	Minor groups	Total(n)	(%)
[Assistance behavior]	<Concern and Cuddling>	{Approaching and Concern}	13	(5.3)
	<Requests to teachers, etc.>	{Calling teachers and friends}	33	(13.3)
		{Following teachers' instructions}	21	(8.5)
	<Coping Behavior>	{Helping with cleaning, etc.}	13	(5.3)
		{Accompanying to the nurse's office, etc.}	2	(0.8)
		{Instructing classmates}	1	(0.4)
[Don't Get Involved]	<Looking on>	{Watch and do nothing}	17	(6.9)
		{Watch from afar}	5	(2.0)
		{Wait and stay restrained}	6	(2.4)
		{Can't do anything}	19	(6.5)
	<Physical avoidance>	{Leaving}	84	(34.0)
		{Not looking}	12	(4.9)
Psychological avoidance	{Increase psychological distance}	2	(0.8)	
Actions that could Negatively Impact Others	<Teasing>	{Being noisy}	6	(2.4)
		{Laughing}	2	(0.8)
	<Expressing Dislike>	{Expressing Dislike}	1	(0.4)
	<Ambivalent Behavior>	{Concern and Teasing}	1	(0.4)
[Impact on Self]	<Own Physical Condition>	{Impact on Own Physical Condition}	2	(0.8)
	<Crying, Confusion>	{Crying, Confusion}	2	(0.8)
	<Verification>	{Aware of Situation}	3	(1.2)
[Others]	<Talking with Friends>	{Talking with Friends}	1	(0.4)
	<Washing Hands>	{Washing Hands}	1	(0.4)

2) Junior High School, Case of Vomiting

About "How do you feel"?

We labeled the free-response statements to the question "How do you feel?" and created 244 labels. The results of the classification of the 244 labels according to the aforementioned analysis method are reported in Table 6; 18 minor, 10 medium, and four large groups were extracted. A total of 241 labels belonged to these groups, and the remaining three labels were deemed unclassifiable. Minor, medium, and large groups are denoted by {}, <>, and [], respectively.

Table 3: Junior High School Vomiting Scene (feeling)

large groups	medium groups	Minor groups	Total(n)	(%)	
[Negative Emotion]	<Disgust>	{Disgusting/smelly}	12	(5.0)	
		{Annoying}	3	(1.2)	
		{Anxiety}	2	(0.8)	
	<Anxiety>	{Anxiety about infectious diseases}	3	(1.2)	
		{Complaints of poor physical health}	6	(2.5)	
	<Uncomfortable>	{Confused}	4	(1.6)	
		{Increase psychological distance}	2	(0.8)	
		{Embarrassed}	2	(0.8)	
	[Empathy and Assistance-oriented]	<Compassion>	{Assistance-oriented}	10	(4.1)
		<Concern>	{Attending to feelings}	5	(2.0)
{Concern}			137	(56.7)	
<Regret>		{Imagining reasons for vomiting}	10	(4.1)	
<Empathy>		{Wish I had noticed the illness}	1	(0.4)	
		{I think it can't be helped}	4	(1.6)	
[Others]	<Surprise>	{Empathy}	8	(3.3)	
	<Surprise>	{Surprise}	20	(8.2)	
	<Indifference>	{Don't worry/Thinking nothing of it}	8	(3.3)	
[Ambivalence]	<Ambivalent>	{Disgust and concern}	4	(1.6)	

About “What behavior do you feel like engaging in”?

Next, free-text responses to the question, “What behavior do you feel like engaging in?” were labeled, which resulted in 267 labels. The results of the classification of the 267 labels according to the aforementioned analysis method are reported in Table 7; a total of 24 minor, 13 medium, and five large groups were extracted. A total of 264 labels belonged to these groups, and the remaining three labels were deemed unclassifiable. Minor, medium, and large groups are denoted by {}, <>, and [], respectively.

Table 4: Junior High School Vomiting Scene (behavior)

large groups	medium groups	Minor groups	Total(n)	(%)
		{Concern}	24	(9.0)
	<Concern and Cuddling>	{Specific behaviors related to the person}	10	(37.9)
	<Requests to the teacher>	{Calling the teacher}	71	(26.9)
		{Following the teacher's instructions}	21	(8.0)
		{cleaning/tidying up}	59	(22.3)
[Assistance behavior]	<Coping behavior>	{accompanying to the nurse's office, etc.}	19	(7.2)
		{instructing students around them}	3	(1.1)
	<Post-lesson involvement>	{teaching the lesson}	1	(0.4)
		{talking to the students afterwards}	1	(0.4)
	<Conflicted>	{Want to escape but help}	1	(0.4)
	<Lie>	{Pretend to help}	1	(0.4)
		{Watch from afar}	5	(1.9)
	<Looking On>	{Do nothing}	12	(4.5)
		{Can't do anything}	3	(1.1)
		{Not looking}	2	(0.8)
[Don't Get Involved]	<Avoidance>	{Leaving}	21	(8.0)
		{Increase psychological distance}	1	(0.4)
		{Not caring}	1	(0.4)
	<Inattention>	{Referring to actions they should take}	1	(0.4)
[Actions that could Negatively Impact Others]	<Teasing>	{Tease}	1	(0.4)
	<Spreading Information>	{Communicating to Third Parties}	1	(0.4)
[Impact on Self]	<Own Physical Condition>	{Negative impact on own physical condition}	1	(0.4)
	<According to the surrounding situation>	{According to the other students' state}	2	(0.8)
[Others]		{According to distance}	2	(0.8)

When we categorized the free responses to the question “How do you feel?”, we found that the major response categories were the same for both second-grade elementary school students and second-grade junior high school students: [Negative], [Empathy/Assistance-oriented], [Others], and [Ambivalent]. However, the frequency of responses differed between the two groups. For the elementary school students, the most common category was [Negative], with 135 responses (52.9%), of which 82 (32.1%) indicated “Dislike.” In contrast, junior high school students most frequently selected [Empathy/Assistance-oriented], with 175 responses (72.6%), particularly “Worry,” which was the most common at 152 responses (63.1%).

Similarly, the major categories for the question “What behavior do you feel like engaging in?” were the same for both groups: [Assistance behavior], [Not getting involved], [Behavior that could negatively influence others], [Influence on self], and [Other]. The elementary school students most often chose [Not getting involved], with 145 responses (58.7%), especially [Physical avoidance], which accounted for 96 responses (39.3%). On the other hand, 211 responses (79.9%) from the junior high school students fell into the [Assistance behavior] category, with [Request to teachers] (92 responses, 34.8%) and [Coping behavior] (81 responses, 30.7%) being particularly frequent.

These findings indicate that the feelings and potential actions of students in situations where injury or illness occurs differ significantly depending on the school level. Specifically, many elementary school students have an aversion to vomiting and often choose to leave the area, while junior high school students are more likely to express concern for students who vomit, actively trying to help them. Additionally, although the number was small, the category of “behavior that may negatively influence others” was present in both elementary and junior high school groups. In the elementary school group, this category included <Teasing>, <Expressing disgust>, and <Ambivalent behavior>, while in the middle school group, it included <Teasing> and <Spreading information>.

Discussion

The purpose of this study was to determine the experiences of non-injured children during an outbreak of vomiting in a group setting, as well as their emotions and behaviors during the outbreak.

Points to Keep in Mind on How to Support Teachers During an Outbreak of Vomiting

We discuss the responses to the hypothetical injury/illness occurrence scenario. The feelings and behaviors of assumed second grade elementary school and second grade junior high school student students were classified partially differently depending on the school type.

Specifically, many elementary school children have an aversion to vomiting and often opt to leave the area. Junior high school students were more likely to express concern for students who vomited, thus indicating that they were more likely to actively try to help students who had vomited. From the above, we believe that, in addition to dealing with the injured or illness person themselves, elementary schools should first provide guidance and support that is attuned to the negative feelings, such as aversion, of the children around them. Furthermore, many of the children were not involved in the behavior, and many tried to leave the scene. If a person chooses not to be involved with an affected child with negative feelings toward them, a risk arises that they may continue to have such negative feelings. While aversion to and anxiety about vomiting are understandable, appropriate guidance and support are needed to prevent surrounding students from feeling aversion to or anxiety about a child who vomits. In junior high schools, guidance and support need to be provided to reassure concerned students by appropriately informing them of the situation of the injured or ill person and the factors that caused the injury or illness, and appropriate responses promoted while respecting the feelings of the students around them who actively try to take supportive actions. In the event of an outbreak of vomiting, the response manual and other manuals state that other students must be removed from the classroom to prevent secondary infections such as infectious gastroenteritis (Sendai City Board of Education, 2013). It is assumed that some students may have difficulty evacuating the room because they are worried about students

who have vomited. We believe that support that leads to psychological reassurance, such as explaining the situation to surrounding students, while respecting the privacy and feelings of the injured or ill person, needs to be provided.

In addition, a few responses from both elementary and junior high schools indicated behaviors that could have a negative impact on others, such as Teasing, which we consider important in considering points to keep in mind when teaching. Igarashi (2010) reports that a student who has difficulty controlling urination due to a congenital disease had to defecate in class, after which some other students expressed attitudes and comments that could be construed as name-calling and bullying (Igarashi, 2010). Whether an injury or illness experience becomes a negative experience or a funny story in adulthood depends largely on the relationship between teachers and children (Fukuda et al., 2022). It is important for teachers not only to respond to the occurrence of an injury or illness, but also to continue to provide guidance after the event, taking great care not to cause inappropriate language or behavior in the surrounding children.

Limitation

This study has the following limitations. First, this study was based on the analysis of college students' recollections. Therefore, the feelings and possible actions of elementary and junior high school students may differ from those of actual elementary and junior high school students in situations where injuries and illnesses occur. For example, in junior high school students, whether they engage in prosocial behavior is determined based on their relationship with others (Nishimura et al., 2018). Therefore, the results of this questionnaire survey may differ from what students actually say and do in actual junior high school situations. In the future, elementary and junior high school students themselves and their teachers should be surveyed, and the actual situation scrutinized using various research methods such as observation and interview survey. In addition, when considering instructional responses to students other than those who are injured or ill, it is important to take individual circumstances and the reality of the classroom into account as part of classroom management and student guidance. In actual educational practice, various other factors such as the relationships between teachers and students, friendships, and classroom climate are also involved in complex ways. A survey encompassing diverse perspectives is desirable in the future.

Conclusions

From the results of the virtual scene, the emotions and behaviors toward injury and illness differed between elementary school students and junior high school students. It was suggested that appropriate instruction differed depending on the development of the student. Most elementary school students were reluctant to vomit and often left the scene. On the other hand, middle school students were more concerned about students who vomited and tended to actively try to help students who had vomited. Appropriate guidance should be considered for each of these differences.

It is important to understand the feelings that classmates feel in injury/illness outbreak situations and to provide appropriate guidance to avoid negative feelings toward the injured person.

Acknowledgements

The authors would like to express our greatest appreciation to all the participants. The preparation of this report was supported by the 2023 JSPS Headquarters Incentive Grant from the Japan Educational Public Employees' Benevolent Association.

References

- DICT Logistical Support Team, Japanese Society of Environmental Infection Control. (2024). Procedures for Disposal of Vomit and Sewage (1st Edition). Available at: http://www.kankyokansen.org/uploads/uploads/files/jsipc/manual_240205.pdf
- Fukuda, H., Goto, M., Okamoto, A., Yamada, K., Igarashi, T., & Yamada, R. (2022). Problems with Teachers of Excretion support, Including Fecal Incontinence in Children at School. *The journal of the Teaching Career Center*. (7), 167-174.
- Igarashi, J. (2010). A Study of Special Needs Education in the Regular Classroom: A Case Study of a Public Junior High School. *Waseda University, Graduate School of Education, Minutes*. 18(1), 89-99.
- Jones, S., Tyson, S., Davis, N., & Yorke, J. (2022). Educational support needs of injured children and their families: A qualitative study. *Journal of Rehabilitation Medicine*. 54, jrm00246. <https://doi.org/10.2340/jrm.v53.710>
- Kamezaki, M., & Ogitsu, M. (2018). Elementary and Junior High School Student Descriptions of their Own Injuries and Illnesses and Nurse-Teacher Responses. *Jpn J School Health*. 60, 219-232. https://doi.org/10.20812/jpnjshhealth.60.4_219
- Kawakita, J. (2017). Hassouhou-Souzousei kaihatsu no tameni. Chuo Koron Shinsha.
- Kimura, H., Nitami, K., & Mizuguchi, A. (2012). Descriptive epidemiology for two outbreak cases of norovirus gastroenteritis in an elementary school. *Japan Journal of Public Health*, 59(2), 101-111. https://doi.org/10.11236/jph.59.2_101
- Ministry of Education, Culture, Sports, Science and Technology. (2018). A Guide to Creating a Crisis Management Manual for Schools. Available at: https://anzenkyouiku.mext.go.jp/mextshiryoku/data/aratanakikijisyoku_all.pdf
- Ministry of Education, Culture, Sports, Science and Technology. (2019). Safety Education in Schools to Foster the “Ability to Live”. Available at: https://www.mext.go.jp/component/a_menu/education/detail/_icsFiles/afieldfile/2019/05/15/1416681_01.pdf
- Nishimura, T., Murakami, T. & Sakurai, S. (2018). Bounce-back in prosociality: From middle childhood to early adolescence. *The Japanese Journal of Psychology*, 89(4), 345-355. doi.org/10.4992/jjpsy.89.16077
- Sendai City Board of Education. (2013). Vomit Disposal Procedures. Available at: https://www.city.sendai.jp/hokentaiku/kurashi/manabu/kyoiku/inkai/kanren/documents/manual04_outobutusyori2013.pdf
- Shinkawa, N., Kawamoto, T., Akiyama, M., Kato, Y., & Nishio, H. (2004). Outbreaks of norovirus gastroenteritis following environmental contamination with vomits from sick children. *Clinical and viral*. 32(3), 195-201.

Watanabe, M. (2010). Peer Relationships in Children with Developmental Disabilities.
Journal of Applied Educational Research, 15, 173-183.

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