

Learning Methods and Issues among Elementary and Junior High School Students in Hospitals: Lack of Access to in-Hospital Classes and Hospital-Visit Education

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Background: In Japan, students with health impairments who are in hospitals can take part in school education through in-hospital classes and hospital-visit education. However, previous studies have demonstrated that a certain percentage of elementary and junior high students do not receive learning support. The problems involved with the provision of school education through in-hospital classes and hospital-visit education should be addressed, to facilitate students' learning in hospitals.

Objective: This study aimed to clarify the reasons for the unavailability of in-hospital classes or hospital-visit education from the perspective of head nurses in pediatric internal medicine and surgery departments, and explore issues arising due to the absence of in-hospital classes and hospital-visit education.

Methods: The Japan Hospital Association, Japanese Association of Children's Hospitals and Related Institutions, and 576 hospitals with pediatric internal medicine or surgery wards were included in our study. The respondents were head nurses in the pediatric internal medicine or surgery wards. This questionnaire survey was conducted as a postal survey from mid-June, 2018 to mid-November, 2018. The questions for the selection formulas were tabulated and statistical analysis was performed. Subsequently, the card arrangement of the KJ method was used to identify themes and categorize them based on similarities.

Results: We collected data from 252 hospitals, and the final sample comprised 245 hospitals. The most common reasons given for not making use of in-hospital classes and hospital-visit education when these were available were "The families of the elementary/junior high school students in the hospital do not insist on education" When in-hospital classes and hospital-visit education were not available, there were issues, mainly in terms of returning to school and learning.

Conclusion: There were also two types of access issues for elementary and junior high school students: some hospitals had no venues for in-hospital classes and hospital-visit education, while other hospitals had venues for in-hospital classes and hospital-visit education that were unavailable to elementary and junior high school students. In hospitals with venues for in-hospital classes and hospital-visit education, the present findings revealed that several elementary and junior high school students in hospitals did not receive in-hospital classes or hospital-visit education, and that their learning mainly depended on the efforts of others, such as their parents and their original school teachers.

Keywords: elementary and junior high school students in hospitals, in-hospital classes, hospital-visit education, health impairments education

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I. Introduction

1. The educational system and its significance for students with health impairments in Japan

In Japan, education is available to students with health impairments. In-hospital classes and hospital-visit education are examples of the education available for students in hospitals. Although there is no clear definition of in-hospital classes, they are usually intended for elementary and junior high school students affected by illness. Educational venues have been established in hospitals as a branch school or a branch classroom of a school for elementary and junior high school students. Therefore, a student's registered residence may be moved from the school where the student is enrolled to in-hospital classes during hospitalization.

Education for students with health impairments in Japan is important in terms of their learning, psychological health, and the impact on society as a whole. The Ministry of Education, Culture, Sports, Science and Technology (MEXT) notes that education for students with health impairments aims to “support positiveness, autonomy, and sociability,” “contribute to psychological stability,” “develop the ability to self-manage illnesses,” and “improve the understanding of medical treatment effects.”¹⁾ It is also desirable to utilize education for students with health impairments to improve their learning and psychosocial issues. Takahashi asked hospitalized junior high school students to freely express what they thought and felt about the time spent in in-hospital classes. Their responses were categorized into the following, 12 aspects, which encompass not only educational but also psychological factors: guarantee of education according to individuality; avoiding getting behind with learning at the original school; intention to learn; gaining confidence in learning and improving learning ability; promotion of psychological divergence; promotion of psychological adaptation during hospitalization; treatment effects such as increased motivation for treatment; promotion of self-growth; increased motivation for school life after discharge; improving self-management motivation after discharge; reassurance that teachers offer support and reassurance and strength to work hard with friends²⁾. From these points, it can be seen that establishing a place for learning during hospitalization affects not only the students' learning but also their psychological well-being.

2. Education problems for students with health impairments in Japan

The education system for the health impaired in Japan is not perfect. In cases where in-hospital classes and hospital-visit education are offered, some parents may be reluctant to move their children to a special needs school³⁾. Dissatisfaction and anxiety regarding these systems can prevent students and their parents from using school education during hospitalization. What is even more problematic in that while there are places intended for the education of students with health impairments, not all hospitals provide venues for the education of such students. Therefore, some students in hospitals cannot obtain learning support.

3. Students who cannot use education during hospitalization

A MEXT survey reported that 41.3% of students hospitalized for 30 days and more than due to illness or injury during the fiscal year 2013 could not use learning support⁴⁾. Furthermore, Ikari and Takahashi found that 81.8% of those who were hospitalized never received in-hospital education⁵⁾. The above studies demonstrate that a certain percentage of students do not receive learning support.

The school in which a student is enrolled may provide educational support to students in hospitals. Among the types of assistance received, surveys revealed that support from the registered domicile was the most noticeable. For instance, Kawai, Fujiwara, Ogasawara et al. examined the extent to which teachers provided learning support (through printout activities or drills) for students who were absent for ten school days and more than due to illness or injury⁶⁾. These authors found that 57.4% and 71.5% of elementary and junior high school teachers, respectively, provided such support. A MEXT survey reported that 1,583 of 2,769 (57.2%) students hospitalized for extended periods (≥ 30 days) due to injury or illness received learning support from their schools⁴⁾. Furthermore, a survey of school nurses and special needs coordinators revealed that, “if the enrolled students from the school are hospitalized, our school teacher will visit these students and deliver teaching materials to ensure that they can study.”⁷⁾. Moreover, learning support may be provided without a place for the education of students with health impairments. Takeda, Tyou, Takeda et al. reported that in-hospital classes and hospital-visit education teachers provided learning support to students

in hospitals who could not enroll in in-hospital classes and hospital-visit education⁸⁾.

For students with health impairments and their families, cooperation with medical professionals is essential because teachers alone may not always be able to provide learning support⁹⁾. However, few studies have investigated the situations surrounding the actual learning conditions of students, as seen by medical staff in hospitals. To further promote cooperation between medical care and education and to facilitate learning of students in hospitals, the problems of learning during hospitalization should be addressed. Therefore, it is necessary to understand in-hospital classes and hospital-visit education. Looking at the environment of students in hospitals who cannot use school education may be helpful for understanding education during hospitalization.

II. Purpose

This study aimed to clarify the reasons for the unavailability of in-hospital classes or hospital-visit education from the perspective of head nurses in pediatric internal medicine and surgery departments. In addition, this study aimed to explore issues arising due to the absence of in-hospital classes and hospital-visit education.

III. Methods

1. Target participants

The Japan Hospital Association (JHA), Japanese Association of Children's Hospitals and Related Institutions (JACHRI), and 576 hospitals with pediatric internal medicine or surgery wards were included in our study. Hospitals belonging to the JHA have 300 beds and more than. The target group was selected based on the need and demand for the establishment of in-hospital classes and hospital-visit education. The inclusion criteria were as follows: a strong focus on medical care and a medical system in place at hospitals exceeding a certain size. The presence or absence of a pediatric internal medicine or surgery wards was confirmed by accessing hospital websites and medical records. The respondents were head nurses in the pediatric internal medicine or surgery wards.

Hospitals with pediatric internal medicine or surgery wards were targeted to clarify whether there were students who could not use in-hospital classes or hospital-visit education during hospitalization and who were not

receiving learning support from their original school. For this purpose, we targeted JACHRI member hospitals and hospitals with 300 beds and more than focusing on pediatrics. Head nurses were targeted because they were assumed to be familiar with the entire ward and to have a relationship with the elementary and junior high school students in hospital, and to provide consistency in terms of the target participants.

2. Survey period

This survey was conducted from the mid-June, 2018 to mid-November, 2018.

3. Survey method

A questionnaire survey was conducted as a postal survey. A reminder postcard was sent in early September to hospitals that had not responded by the end of August, prompting them to reply with completed questionnaires.

4. Questions

For each question, we created a questionnaire that included both items based on previous research and unique items. After creating the questionnaire, its content was revised based on the advice of academic advisors, educators, and medical personnel. In addition, we asked one experienced head nurse to confirm the questionnaire items, and revised the description of terms based on their advice.

The questions were created based on several factors, such as students' learning environment. Some items of the questionnaire were multiple-choice questions. The item regarding "Issues arising due to the absence of in-hospital classes and hospital-visit education" was an open-ended question.

The first section pertained to basic hospital information. It included items such as hospital type (acute or chronic hospital), number of beds (entire hospital and pediatric wards), and maximum and minimum hospitalization days.

The second section included items regarding the conditions of use of in-hospital classes and hospital-visit education for students admitted to the hospital and the situation of those who could not use these services.

Finally, if students could not use in-hospital classes and hospital-visit education, the following were examined: their learning environment, and issues arising due to the absence of in-hospital classes and hospital-

visit education.

5. Analytical Method

The questions for the selection formulas were totaled and tabulated. Thereafter, statistical analysis was performed using the Anaconda package in Python. A chi-square test was used to identify statistical difference.

Additionally, for the open-ended question on issues arising due to the absence of in-hospital classes and hospital-visit education, responses were organized according to the KJ method. The first author used the card arrangement of the KJ method to identify themes and categorize them based on similarities. Those responses that were judged to not be relevant were excluded. The KJ method analysis was confirmed by the second author, who works in the education field, and the validity of the content was confirmed.

6. Ethical Considerations

This study was approved by the Human Sciences Research Ethics Committee, University of Tsukuba (approval number: 20-23).

IV. Results

1. Basic Information on Hospitals

We collected data from 252 of 576 hospitals (response rate: 43.8%). Of these, seven hospitals were excluded because they did not have a pediatric internal medicine or surgery ward, did not have any elementary or junior high school students in the hospital, or did not agree to participate in the survey. The final sample comprised 245 hospitals. From these, the valid response rate was: 97.2%.

(1) Hospital capacity

Of the 245 hospitals, 229 were acute hospitals, seven were acute and chronic hospitals, one was a chronic hospital, three hospitals were not acute and chronic hospitals, and five did not respond. Next, we asked about the number of beds in the entire hospital in units of 100 beds. All hospitals with <300 beds were JACHRI members. Only two hospitals had <100 beds, one had 100 beds, 12 had 200 beds, 65 had 300 beds, 53 had 400 beds, 108 had ≥500 beds, and four did not respond; 44% of the sample had ≥500 beds, and 6.1% had <300 beds. Further, we asked about the number of beds in the pediatric wards and aggregated them in units of 25 beds. A total of 122 hospitals had <25 beds, 87 had 26 to 50 beds, 12 had 51 to 75 beds, four had 76 to 100 beds, eight had >100 beds, seven hospitals answered “indefinite,” and five did not respond.

We asked about the shortest and longest hospital stays in pediatric ward. The shortest hospital stays were within and up to one week in all hospitals, and 16 hospitals did not respond; 144, 82, and three hospitals reported the shortest duration to be less than a day, 1-3 days, and 4-7 days, respectively. The longest hospitalization periods were <1 month (68 hospitals), one month to less than half a year (85 hospitals), half a year to less than one year (35 hospitals), and ≥1 year (29 hospitals). Four hospitals were unclear, and 24 hospitals did not respond.

2. Learning among elementary school students in hospitals

(1) Learn Environment

Table 1 shows the extent of use of in-hospital classes and hospital-visit education among elementary school students in hospitals, and the context of those who could not use these services. Findings revealed that 124

Table 1 The presence or absence, and use of, in-hospital classes and hospital-visit education by elementary school students

Can use in-hospital classes and hospital-visit education	In-hospital classes and hospital-visit education		p value
	Yes (n=124) (50.6%)	No (n=114) (46.5%)	
Yes (n=159) (64.9%)	94(38.4%)	65(26.5%)	0.014
No (n=65) (26.5%)	26(10.6%)	39(15.9%)	

Note. A chi-square test was performed ($\chi^2(1) = 6.03$). Twenty-one participants did not answer the “Can use in-hospital classes and hospital-visit education” question. Regarding non-responders to this question, the breakdown of in-hospital classes and hospital visit education was four (1.6%) for Yes, ten (4.1%) for No, and seven (2.9%) for no-answer.

(50.6%) provided in-hospital classes or hospital-visit education, 114 hospitals (46.5%) did not provide in-hospital classes or hospital-visit education, and seven (2.9%) did not respond. Additionally, 65 (26.5%) of the 245 sampled hospitals had elementary school students who could not use in-hospital classes or hospital-visit education. Furthermore, in hospitals where there were in-hospital classes or hospital-visit education, in 26 hospitals (10.6%), elementary school students could not use the in-hospital classes or hospital-visit education. In hospitals that did not have in-hospital classes or hospital-visit education, in 39 hospitals (15.9%), elementary school students could not use in-hospital classes or hospital-visit education. The chi-squared test showed a significant difference in the number of elementary school students who could not use the in-hospital and hospital-visit education services ($\chi^2(1) = 6.03, p < .05$).

Table 2 shows how learning was conducted when elementary school students in hospitals could not use in-hospital classes and hospital-visit education. The most common methods included family members' teaching, and getting printed learning material from the student's original school. Unknown because it is left to each family was listed as the third most common reason. Further statistical analysis was not performed because of the small number of obtained responses.

Additionally, when head nurses mentioned that medical personnel provide learning support, we asked them to describe the role of the medical staff involved. Five hospitals reported that nursery teachers and nurses were the most common staff members to provide support, with nurses involved in teaching in four of these. Furthermore, doctors taught elementary school students in hospitals with or without in-hospital classes and hospital-visit education. Moreover, when there were no in-hospital classes or hospital-visit education, respondents answered that residents, clinical psychologists, and nursing students undergoing training were involved in teaching of elementary school students in the hospital.

(2) Clarifying the reasons for the unavailability of in-hospital classes or hospital-visit education from the perspective of head nurses

Table 3 shows the reasons for elementary school students not using in-hospital classes and hospital-visit education. In descending order, the following reasons were reported: no in-hospital classes or hospital-visit education available, The families of the elementary school students in the hospital do not insist on education, provision of education is difficult due to treatment,

elementary school students in hospitals do not want education, and "other." However, when such services were available, the most common reason for not using them was that it was determined that the families of the elementary school students in the hospital do not insist on education. Further statistical analysis was not performed because of the small number of responses obtained.

(3) Issues arising due to the absence of in-hospital classes and hospital-visit education

Table 4 describes the issues arising due to the absence of in-hospital classes and hospital-visit education. This was an open-ended question section. We collected 54 statements from 39 head nurses. The target was 45 sentences from head nurses in 33 hospitals.

The statements were classified into seven categories, including: anxiety about school life after returning to the original school; learning of elementary school students in hospital; how elementary school students spend their time during hospitalization; thoughts on family learning for elementary school students; communication with medical staff; communication with teachers at the child's original school; psychology of elementary school students in hospital. According to the head nurses, the most common sources of issues were: anxiety about school life after returning to the original school, and learning of elementary school students in hospital, with 15 sentences each. These were followed by sentences relating to how elementary school students spend their time during hospitalization, which comprised nine sentences. Thoughts on family learning for elementary school students and communication with medical staff comprised two sentences each. Communication with teachers at the child's original school and psychology of elementary school students in hospital comprised one sentence each.

3. Learning among junior high school students in hospitals

(1) Learning environment

Table 5 shows the results for the learning environment for junior high school students. Findings revealed that 103 hospitals (42.0%) provided in-hospital classes or hospital-visit education, and 111 hospitals (45.3%) did not provide in- them, while 31 hospitals (12.7%) did not respond. Furthermore, junior high school students were unable to use in-hospital classes or hospital-visit education in 24 hospitals (9.8%) that provided in-hospital

Table 2 Learning method of elementary school students who answered “Cannot use in-hospital classes and hospital-visit education”

Rank	Alternative learning method	In-hospital classes and hospital-visit education		Total
		Yes (n=26)	No (n=39)	
1	Family members’ teaching	13	24	37
2	Getting printed learning material from the student’s original school	17	15	32
3	Unknown because it is left to each family	6	12	18
4	Medical personnel provide learning support	3	13	16
5	Request for a tutor granted	2	1	3
6	Use distance learning (Benesse, etc.)	1	2	3
7	Guidance from students and general volunteers	1	2	3
8	Watch recorded classes from the student’s original school	1	0	1
9	Seek clarifications from the teachers at the student’s original school	1	0	1
10	Seek permission to use internet services such as video classes	0	1	1
11	Attend classes at the student’s original school through video conferencing	0	0	0
	Other	5	7	12

Note. This question is only for those elementary school students who answered YES to “Cannot use in-hospital classes and hospital-visit education.” This is a multiple-choice question.

Table 3 Reasons for elementary school students not using in-hospital classes and hospital-visit education

Rank	Reason	In-hospital classes and hospital-visit education		Total
		Yes (n=26)	No (n=39)	
1	No in-hospital classes or hospital-visit education available	2	38	40
2	The families of the elementary school students in the hospital do not insist on education	14	1	15
3	Provision of education is difficult due to treatment	9	3	12
4	Elementary school students in hospitals do not want education	3	0	3
	Other	9	1	10

Note. This question is only for those elementary school students who answered YES to “Cannot use in-hospital classes and hospital-visit education.” This is a multiple-choice question.

classes and hospital-visit education. Twenty-eight (11.4%) hospitals did not provide in-hospital classes or hospital-visit education for junior high school students. Furthermore, the chi-square test revealed no significant differences in between those who received and those who did not receive in-hospital classes or hospital visit education the in-hospital and hospital-visit education services ($\chi^2(1) = 0.10$, n.s.).

Table 6 illustrates the learning methods used by junior high school students to learn when in-hospital classes and hospital-visit education are not available. The most common learning methods were: getting printed learning material from the student’s original school, unknown

because it is left to each family, and family members’ teaching. Further statistical analysis was not performed because of the small number of responses obtained.

Additionally, when the head nurse mentioned that medical personnel provide learning support, we asked them to describe the role of the medical staff involved. Nursery teachers were the most common, followed by nurses. Moreover, if hospitals had in-hospital classes and hospital-visit education, then doctors provided learning support. If hospitals did not have in-hospital classes and hospital-visit education, residents, ward staff, nursing students and clinical psychologists provided it.

Table 4 Issues arising due to the absence of in-hospital classes and hospital-visit education for elementary school students

Sentences	Category
I'm worried that children may get behind in their learning due to being hospitalized for 1–2 months.	
I worry that children who have been hospitalized for more than 2 weeks may not be able to adjust after returning to their original school. Since it is left to each individual, learning time is completely different depending on the child, and there may be concerns about getting behind with learning.	
Some children don't have any desire to learn at all, and I feel uneasy about them returning to their original school.	
If the hospitalized child's family is enthusiastic about the child learning, that is good, but if the child is not interested in learning during hospitalization, I am worried that they may fall behind at school after discharge.	
The nurses have been unable to provide consistent teaching, and the hospitalized children get worried about whether they will be able to keep up with the classes at their original school.	
When hospitalized children don't work on the printouts from their original school even when urged to do so, I worry about whether they will be able to keep up with the lessons when they go back to their original school.	
I'm worried about whether children can cope with learning for 45 minutes.	
When I see the elementary school students playing games instead of learning, I get worried about whether they will be able to cope with school life after discharge.	Anxiety about school life after returning to the original school
I'm worried about whether hospitalized children can cope with school after discharge, and whether they can adjust to the rhythm of everyday life and going to school every day.	
Hospitalized children have been unable to keep up with classes at school after being discharged.	
I have been worried whether hospitalized children would be able to keep up after returning to school after a long hospital stay.	
I'm worried that children may fall behind and not be able to cope when they return to school.	
I never seemed to see hospitalized children learn during hospitalization, and worried that they couldn't keep up with school classes after leaving the hospital.	
I feel anxiety about how hospitalized children will cope when they return to their original school.	
There are many children who just play games all the time if their learning time is not planned for them, and as we have limited opportunities to meet with their family members, I get worried about the children's learning.	
Even when we received a daily schedule for the hospitalized children and planned their learning together, the time they had available to do homework was limited, and they had difficulty concentrating.	
I was worried that hospitalized children wouldn't be able to understand when their learning became more difficult.	
Even if the periods when hospitalized children are supposed to learn are fixed, some children find it hard to concentrate, and because the hospital staff can only monitor their progress during intervals when they are not busy with other work, sometimes the children do not progress well with the projects that have been assigned to them by the school.	Learning of elementary school students in hospital
Because some children didn't have the habit of learning even before being hospitalized, urging them to learn while in hospital wasn't effective.	
There are many children who cannot learn without being supervised, even if they receive printouts from school.	
Even if hospitalized children work through the printouts assigned to them individually by their teachers at school, they can't ask questions because they aren't attending classes.	

Sentences	Category
<p>Children who aren't self-motivated don't learn, even when they are asked to.</p> <p>Hospitalized children don't have periods of time when they can focus on learning.</p> <p>Hospitalized children do their homework done, but they don't seem to make progress.</p> <p>A first grader at elementary school was hospitalized. The child's mother didn't seem to push the child to learn, and although the nurses encouraged the child to learn, the child didn't really seem to be learning.</p> <p>If children are hospitalized for a long time, although in some cases drills and other work will be provided for them, since the medical staff are not directly involved (and have no time), it is left to the children.</p> <p>Even though a hospitalized child's mother and the nurses encouraged the child to learn, the child disliked learning, so the child didn't get any learning done despite being hospitalized for over a month.</p> <p>Before the hospital-visit education started, hospitalized children had a learning time with a childcare teacher in the playroom, but they couldn't keep it up.</p> <p>A child was due to be in the first year at junior high school starting from spring, but the child was hospitalized in March and still wasn't able to do any learning in June.</p>	Learning of elementary school students in hospital
<p>The children seem to spend a lot of time watching DVDs, etc., so I think there is a need to plan the children's learning systematically according to the daily time schedule.</p> <p>Children spend a lot of time playing games, which I think adversely affects other patients.</p> <p>Children were spending a lot of time playing games and their life rhythm seemed to be disturbed, so I set up a daily schedule so that they could live a more regular life.</p> <p>The children spend all their time playing games.</p> <p>Because the children spend a lot of time playing games, I decided to allocate specific times for learning and get involved in it.</p> <p>Children don't feel the need for learning, and just play games all the time.</p> <p>Children can't live a regular life.</p> <p>Child always say "I don't have anything to do now" and come to the staff station.</p> <p>Children don't listen when prompted to learn.</p>	How elementary school students spend their time during hospitalization
<p>The children's families don't seem worried about it either.</p> <p>There is concern because of not knowing what level children should be at for their age, and the parents sometimes express concern about this too.</p> <p>Depending on the parent's policy, how much time children spend on self-learning varies from child to child, so there were times when I was worried about how much I should intervene.</p> <p>Staff don't have much time to be with the children and encourage them to learn.</p>	Thoughts on family learning for elementary school students
<p>Educators don't come to the hospital because the school is far away, so I do wonder if they are actually thinking about the future of each individual child.</p>	Communication with medical staff
The children feel stress.	Communication with teachers at the child's original school
	Psychology of elementary school students in hospital

Table 5 The presence or absence, and use of, in-hospital classes and hospital-visit education for junior high school students

Can use in-hospital classes and hospital-visit education	In-hospital classes and hospital-visit education		p value
	Yes (n=103) (42.0%)	No (n=111) (45.3%)	
Yes (n=152) (62.0%)	76 (31.0%)	76 (31.0%)	0.75
No (n=52) (21.2%)	24 (9.8%)	28 (11.4%)	

Note. A chi-square test was performed ($\chi^2(1) = 0.10$). Forty-one participants did not answer the “Can use in-hospital classes and hospital-visit education” question. Regarding non-responders to this question, the breakdown in relation to in-hospital classes and hospital visit education was three (1.2%) for Yes, seven (2.9%) for No, and 31 (12.7%) for no-answer.

Table 6 Learning method of junior high school students who answered “Cannot use in-hospital classes and hospital-visit education”

Rank	Alternative learning method	In-hospital classes and hospital-visit education		Total
		Yes (n=24)	No (n=28)	
1	Getting printed learning material from the student’s original school	14	18	32
2	Unknown because it is left to each family	8	10	18
3	Family members’ teaching	6	9	15
4	Medical personnel provide learning support	3	8	11
5	Request for a tutor granted	2	1	3
6	Use distance learning (Benesse, etc.)	1	2	3
7	Guidance from students and general volunteers	1	2	3
8	Seek permission to use internet services such as video classes	0	1	1
9	Seek clarifications from the teachers at the student’s original school	0	1	1
10	Watch recorded classes from school	0	0	0
11	Attend classes at the student’s original school through video conferencing	0	0	0
	Other	6	8	14

Note. This question is only for those junior high school students who answered YES to “Cannot use in-hospital classes and hospital-visit education.” This is a multiple-choice question.

(2) Clarifying the reasons for the unavailability of in-hospital classes or hospital-visit education from the perspective of head nurses

Table 7 shows the reasons for junior high school students not using in-hospital classes and hospital-visit education. In descending order, the following reasons were observed: no in-hospital classes or hospital-visit education available, The families of the junior high school students in the hospital do not insist on education, provision of education is difficult due to treatment, junior high school students in hospitals do not want education, and “other.” However, when these services were available, the most common reason given was that the families of the junior high school students in the hospital

do not insist on education. Further statistical analysis was not performed because of the small number of responses obtained.

(3) Clarifying the issues arising due to the absence of in-hospital classes and hospital-visit education

Table 8 depicts issues arising due to the absence of in-hospital classes and hospital-visit education. This was an open-ended question section. We collected 44 sentences from head nurses in 28 hospitals. The target was 29 sentences from head nurses in 20 hospitals.

The statements were classified into six categories, including: anxiety about school life after returning to the original school; exams at high school and future of junior

Table 7 Reasons for junior high school students not using in-hospital classes and hospital-visit education

Rank	Reason	In-hospital classes and hospital-visit education		Total
		Yes (n=24)	No (n=28)	
1	No in-hospital classes or hospital-visit education available	0	22	22
2	The families of the junior high school students in the hospital do not insist on education	10	4	14
3	Provision of education is difficult due to treatment	8	2	10
4	Junior high school students in hospitals do not want education	6	0	6
	Other	6	3	9

Note. This question is only for those junior high school students who answered YES to “Cannot use in-hospital classes and hospital-visit education.” This is a multiple-choice question.

high school students in hospital; how junior high school students spend their time during hospitalization; learning of junior high school students in hospital; communication with medical staff; and thoughts on family learning for junior high school students. According to the head nurses, the most common sources of issues were: anxiety about school life after returning to the original school and exams at high school and future of junior high school students in hospital, which were mentioned nine and six sentences, respectively. How junior high school students spend their time during hospitalization was mentioned five sentences, while the learning of junior high school students in hospital was mentioned four sentences, and communication with medical staff was mentioned in three sentences. Thoughts on family learning for junior high school students were mentioned in two sentences.

IV. Discussion

1. Application of and participation in in-hospital classes and hospital-visit education

This study confirmed that some students could not use in-hospital classes and hospital-visit education regardless of the ward size. Additionally, there were two types of hospitals that could not provide in-hospital classes or hospital-visit education to students: hospitals without a venue for in-hospital classes and hospital-visit education, and hospitals with a venue for in-hospital classes and hospital-visit education that was unavailable to students.

Hospitals without a venue for in-hospital classes and hospital-visit education should aim to provide appropriate opportunities for continued learning of students, such as by the development of spaces for in-hospital

classes and hospital-visit education. These junior high school students may be able to continue learning if an appropriate opportunity is provided, such as in-hospital classes and hospital-visit education, which are required of all hospitals.

When elementary and junior high school students in hospitals could not use in-hospital classes and hospital visit education, head nurses most commonly commented that education was left up to the individual families, and so they weren't clear about this. In addition, some families may be reluctant to send their children to special schools³⁾. Inadequate understanding of the necessity of in-hospital classes and hospital visit education may also negatively influence families' in regard to enrolling their children in in-hospital classes or hospital-visit education. In a survey among university students before a lecture outlining of in-hospital classes and educational activities, most respondents answered that they could not concretely imagine in-hospital classes¹⁰⁾. While this was an example from university students, the same may apply to the families of students in hospitals. The head nurses who participated in our study may not have identified out families' lack of participation in hospital-based schooling as being due to a lack of understanding of in-hospital classes and hospital-visit education.

Given the lack of understanding regarding in-hospital classes and hospital-visit education, families and medical staff should become familiar with what hospital-based education is. Furthermore, educators should aim to understand this form of schooling more extensively. For example, a MEXT project for students in hospitals involved creating and distributing pamphlets and leaflets about study in hospitals in Aomori Prefecture and Ube City¹¹⁾. Expanding these efforts may be effective in

Table 8 Issues arising due to the absence of in-hospital classes and hospital-visit education for junior high school students

Sentences	Category
I felt that students wouldn't be able to keep up with their classes when they returned to school after discharge because their learning habits had deteriorated.	Anxiety about school life after returning to the original school
I feel anxiety about how the children will cope when they return to school.	
A student in the first year at junior high school didn't learn even when given printouts, so I was worried that the student would not be able to keep up with their original school lessons when they returned to school.	
Since it is left to each individual, their learning time is completely different depending on the child, and I sometimes worry that they may be falling behind in their learning.	
As the student was being raised by their grandparents, who didn't seem to notice whether the student was falling behind, I was worried whether the child would be able to keep up with school lessons.	
I was worried about a student who had just started in the first year at junior high school who was going back to school.	
I was worried about whether a child would be able to keep up with the classes at their original school, because even when the student's family brought printouts from school, the student couldn't learn.	
Even when the student went back to school, the progress sometimes did not match how well they had been doing at their original school.	
The child's parents didn't even bother to try to encourage them to learn, and when medical staff urged the child to learn, that didn't have any effect, so I was worried about whether the child would be alright when they went back to school after discharge.	Exams at high school and future of junior high school students in hospital
A child's mood was not stable because of a psychological problem so they could not settle down and learn, which made me worried about their future.	
Students could not take exams.	
A child in the third year at junior high school had been recommended for a place at a high school, but it was canceled due to insufficient attendance days.	
I'm worried that students will have problems taking high school exams.	
A student in the third year at junior high school was making an effort to learn, but this student was worried that they might not be able to handle the examinations, so I wondered what could be done about the system.	
If I can only give printouts provided by the school to children at a time when they need to be choosing their future path in life, then the children get very anxious about the future.	
When the children have time, there is a lot of playing games, which is a bad influence on the other children.	
Students are still playing games even when they are coming up to a scheduled exam.	
A boy in the third year at junior high school did not learn much during hospitalization (only playing games and reading manga comics), and left the work assigned by their school undone, so I was worried about them.	
A student in the second year at junior high school received assignments from school, but they were just playing games and didn't do much as touch the assignments.	
I'm worried that students bring textbooks with them, but then spend all their time playing games.	
Some students were due to take exams soon, but they didn't spend much time learning.	
There was a student who wanted to learn, but it wasn't an appropriate learning environment due to crying of young children in the sickroom (which was a large room with multiple patients).	
I approved the use of an interview room, etc. for learning, but students could not concentrate because they were in a hospital ward environment.	Learning of junior high school students in hospital
Children showed a lack of willingness to learn.	
A student in the third year in junior high school wasn't learning at all, and because I didn't know the intentions of the student or their family about their academic future, I didn't know how to support them.	Communication with medical staff

Sentences	Category
Staff don't have much time to encourage students to learn.	
A student in the second year in junior high school was hospitalized. The student tried to learn on their own, but because the student had been admitted with a problem with mental instability, I couldn't tell how effective the student's efforts to learn were.	Communication with medical staff
The families treat students like they would younger children, so it is not possible to speak to them in a way appropriate for their age.	
I feel that part of the problem is that students' families do not think it matters that the students are not learning.	Thoughts on family learning for junior high school students

encouraging the use and understanding of in-hospital classes and hospital-visit education.

Common to both cases was the method of learning support: getting printed learning material from the student's original school, and the family members' teaching. Learning via these methods may be burdensome to the families and teachers of students in hospitals. There were also examples of learning support outside of school education, with and without in-hospital classes and hospital-visit education. Although learning support from the student's original school and from outside of the school context may be provided, not all schools have used this support. In education outside of the school context, efforts are being made to associate this with in-hospital classes and hospital-visit education, and methods to connect with elementary and junior high school students in hospitals must be demonstrated.

2. Head nurses' thoughts on learning

Some participants indicated that the education of hospitalized students is left to the discretion of each family. This shows that nurses are busy with their daily tasks and not focused on the education of students in hospitals. However, since medical care and education are sometimes closely related during hospitalization, it is necessary to comprehensively analyze the situation and devise solutions accordingly. In an example of in-hospital classes, Tanaka, Okuzumi and Ikeda reported that the results of collaboration with multiple professionals were seen both inside and outside the hospital¹²⁾. However, under the present circumstances, education for students with health impairments is sometimes recognized after working in pediatrics, and even in the case of in-hospital classes, nurses report that they recognize that cooperation with teachers is insufficient¹³⁾. Therefore, it is necessary to provide head nurses with opportunities to learn about the education of students in hospitals and to share information at regular meetings to facilitate collaboration

with schoolteachers. Additionally, other medical professionals need to learn about education in hospitals to further promote cooperation between medical staff and education professionals.

3. Problems of students in hospitals regarding lack of in-hospital classes and hospital-visit education

In cases where in-hospital classes and hospital-visit education were unavailable, some responses were related to the anxiety of students, their families, and medical staff. It was shown that the anxiety was not only about learning during hospitalization, but also about learning after discharge. With this in mind, the main problem with the lack of in-hospital classes and hospital-visit education during hospitalization might be the learning and lifestyle changes of students. It is possible to expect to secure learning time and improve the lifestyle habits of students taught in hospital classes and hospital-visit education. However, if in-hospital classes or hospital-visit education are absent, it will be more difficult to secure study time and get children to adjust lifestyle habits voluntarily.

Furthermore, being able to use in-hospital classes and hospital-visit education may lead not only to the implementation of learning during hospitalization, but also to an adjusted lifestyle. The requests for learning in hospital from elementary and junior high school students in the hospital, their families, and medical staff show that there are problems that can be solved by having in-hospital classes and hospital-visit education.

4. Recommendations

In this study, it was not possible to determine the reason why the families decided that they did not need in-hospital classes or hospital-visit education. It is thus necessary to clarify this issue in the future.

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