

## BRIEF REPORT

# Would medical students enter an exclusion zone in an infected district with a high mortality rate? An analysis of book reports on 28 (secondary publication)

Kun Hwang<sup>1\*</sup>, Hyung Sun Hong<sup>2†</sup>, Won Young Heo<sup>2†</sup><sup>1</sup>Department of Plastic Surgery, Inha University School of Medicine, Incheon, Korea; <sup>2</sup>Inha University School of Medicine, Incheon, Korea**Abstract**

This study aimed to ascertain whether medical students would enter a closed area where there was a raging epidemic of an infectious disease with a high fatality rate, and includes reasons for the students entering or refusing to enter. Participants included 50 second-year medical students. They were assigned to read a novel entitled 28, written by Youjeong Jeong, and discuss it in groups. Using their book reports, their decisions of whether or not to enter *Hwayang*, the city from the novel, and the reasons for their decisions were analyzed; we furthermore investigated the factors affecting their decisions. Among the 50 respondents, 18 students (36%) answered that they would enter, and the remaining 32 students (64%) answered that they would not enter the zone. The reasons given for entering were responsibility (44%), sense of ethics (33%), social duty (17%), and sense of guilt (6%). The reasons the students provided for not entering were inefficiency (44%), worry regarding family (28%), needlessness of sacrifice (19%), and safety not ensured (9%). Students who had four or fewer family members were more likely to enter *Hwayang* than were students who had five or more family members (odds ratio, 1.85). Students who had completed over 100 hours of volunteer work were more likely to enter *Hwayang* than were students who had volunteered less than 100 hours (odds ratio, 2.04). Owing to their “responsibility” as a doctor, 36% of medical students answered that they would enter an exclusion zone in an infected district with a high fatality rate. However, 64% answered they would not enter because of “inefficiency.” For the medical students it is still a question ‘To enter or not to enter?’

**Key Words:** Books; Epidemics; Medical students; Odds ratio; Writing

Recently, in an interview for a medical school entrance examination, examinees were asked to read a summary of the novel by Youjeong Jeong, 28, and indicate whether they would enter a closed area named *Hwayang* where there was raging epidemic of an infectious disease with a high fatality rate. The

summary of 28 is as follows.

A mysterious epidemic broke out in *Hwayang* which has a population of 290,000 and is located near the capital area. The first patient is a middle-aged man who breeds dogs. After being bitten by a sick dog, his eye becomes red and swollen and bleeding symptoms appear throughout his body. The 119 rescue teams sent to save him also become infected, and this zoonotic epidemic, named “red eye,” subsequently spreads all over the city. The medical doctors and nurses involved in the emergency also fall victim to the disease. Citizens suffer from terrible fear, leading the central government decides to close the border of *Hwayang* to impede the spread [1].

The interviewers said that most examinees answered that

\*Corresponding email: [jokerhg@inha.ac.kr](mailto:jokerhg@inha.ac.kr)

†Medical Student

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they would enter *Hwayang*. This interview technique indicates that medical schools are scoring students' ability to agree on a literary work in the selection process of medical students. We were curious whether currently enrolled medical students still had the same intention as in their medical school interview. The aim of this study is to ascertain whether medical students would enter a closed area where there is a raging epidemic of an infectious disease with a high fatality rate, as well as the reasons for entering or refusing to enter.

Participants included 50 second-year medical students of the Inha University School of Medicine. They were assigned to read 28 and discuss it in groups. Their opinions were discussed in an open forum. Using their book reports, their decisions and reasons for entering or not entering *Hwayang* were analyzed. Factors affecting their decisions, such as age, gender, marital status, number of family members, and volunteer work hours were also analyzed. Two weeks before submitting their book report for 28, students were introduced to pathography and allowed to write about their own experience of illness [2]. The severity of the illness was classified as a minor illness, in-

cluding (1) a spontaneously healing disease such as influenza, (2) a minor illness needing treatment, and (3) an illness that prevents daily work; or a major illness, including (4) a disease that affects the rest of his/her life and has irreversible consequences, and (5) the death or near death of a patient.

The results were as follows: among the 50 respondents, 18 students (36%) answered that they would enter and the remaining 32 (64%) answered that they would not enter the zone. The reasons provided for entering were responsibility (44%), sense of ethics (33%), social duty (17%), and sense of guilt (6%). The reasons given for not entering were inefficiency (44%), worry regarding family (28%), needlessness of sacrifice (19%), and safety not ensured (9%) (Table 1). Students under 24 years were more likely to enter *Hwayang* than were students over 25 years (odds ratio [OR], 2.10). Males were more likely to enter *Hwayang* than were females (OR, 2.02). The responses for entering *Hwayang* were similar for married and unmarried students (OR, 1.13). Students with four or fewer family members were more likely to enter *Hwayang* than were students who had five or more family members (OR, 1.85). Students who had completed more than 100 hours of volunteer work were more likely to enter *Hwayang* than were students who had completed less than 100 hours (OR, 2.04). Students who had experienced severe illness themselves or whose close relative had experienced a severe illness were more likely to enter *Hwayang* than were those who had experienced only a mild illness (OR, 1.78) (Table 2).

Among the 50 respondents, 18 students (36%) answered that they would enter the zone, while 32 (64%) answered that they would not enter the zone. Irrespective of their decision for entering, all the students wrote that it was their will to do their best as a doctor in such a situation. No student expressed an air of indifference. Students under 24 years were more like-

**Table 1.** Reason for entering or not entering an exclusion zone in an infected district with a high mortality rate

	Variable	No. (%)
Enter	Responsibility	8 (44)
	Sense of ethics	6 (33)
	Social duty responsibility	3 (17)
	Sense of guilt	1 (6)
Not enter	Inefficiency	14 (44)
	Worry for family	9 (28)
	Needless sacrifice	6 (19)
	Safety not ensured	3 (9)

**Table 2.** Characteristics for entering an exclusion zone in an infected district with a high mortality rate

Variable		Enter the zone			OR	95% CI
		Yes	No	Total		
Age (yr)	Over 25	14	20	34	2.10	0.56–7.92
	Under 24	4	12	16		
Gender	Male	13	18	31	2.02	0.58–7.02
	Female	5	14	19		
Marital status	Married	1	2	3	1.13	0.96–13.44
	Single	17	30	47		
No. of family members	Less than 5	16	26	42	1.85	0.33–10.22
	Equal to or greater than 5	2	6	8		
Voluntary work (hr)	Equal to or greater than 100	8	9	17	2.04	0.61–6.82
	Less than 100	10	23	33		
Experience of illness	Minor	13	19	32	1.78	0.51–6.21
	Major	5	13	18		

OR, odds ratio; CI, confidence interval.

ly to enter *Hwayang* than were students over 25 years (OR, 2.10). The reason for this may be that the older students have had more time to think over their sense of duty or responsibility as a medical doctor. Males were more likely to enter *Hwayang* than were females (OR, 2.02). Female students first considered the impact of their absence on their remaining family, while male students demonstrated a willingness to enter the zone and work. The responses whether to enter *Hwayang* were similar for married and unmarried students (OR, 1.13). Because of the low percentage of married respondents (only 3), this result cannot be interpreted as significant.

Students who had four or fewer family members were more likely to enter *Hwayang* than were students with five or more family members (OR, 1.85). We thought that the students who lived with many family members would have close relationships with them, and therefore would hesitate to enter the zone because of worry for the remaining family members. Students who had completed more than 100 hours of voluntary work were more likely to enter *Hwayang* than were students who had completed less than 100 hours (OR, 2.04). Students who had volunteered more than 100 hours are thought to have a greater spirit of sacrifice or social responsibility. Students who had experienced severe illness themselves, or who had a close relative who had experienced a severe illness, were more likely to enter *Hwayang* than were those who had experienced a mild illness (OR, 1.78). We think that the students whose family member had passed away from illness understand the great

emotional pain of losing a close family member, and this prompted them to hesitate to enter the zone.

Due to their 'responsibility' as a doctor, 36% of medical students answered that they would enter an exclusion zone in an infected district with a high mortality rate. However, 64% answered they would not enter because of 'inefficiency.' In such situation, epidemic control commissioners including medical doctors must enter the exclusion zone in an infected district. It is needed to have provision for such extreme situations.

**ORCID:** Kun Hwang: <http://orcid.org/0000-0002-1994-2538>

## CONFLICT OF INTEREST

No potential conflict of interest relevant to this article was reported.

## SUPPLEMENTARY MATERIAL

Audio recording of the abstract.

## REFERENCES

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