Medical students' clinical performance of dealing with patients in the context of domestic violence

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Purpose: The aim of this study was to inquire about the clinical performance and determine the performance pattern of medical students in standardized patient (SP) based examinations of domestic violence (DV).

Methods: The clinical performance sores in DV station with SP of third-year (n=111, in 2014) and 4th-year (n=143, in 2016) medical students of five universities in the Busan-Gyeongnam Clinical Skills Examination Consortium were subjected in this study. The scenarios and checklists of DV cases were developed by the case development committee of the consortium. The students' performance was compared with other stations encountered in SP. The items of the checklists were categorized to determine the performance pattern of students investigating DV into six domains: disclosure strategy (D), DV related history taking (H), checking the perpetrator's psychosocial state (P), checking the victim's condition (V), negotiating and persuading the interviewee (N), and providing information about DV (I).

Results: Medical students showed poorer performance in DV stations than in the other stations with SP in the same examination. Most students did confirm the perpetrator and commented on confidentiality but ignored the perpetrator's state and patient's physical and psychological condition. The students performed well in the domains of D, H, and I but performed poorly in domains P, V, and N.

Conclusion: Medical students showed poor clinical performance in the DV station. They performed an 'event oriented interview' rather than 'patient centered' communication. An integrated educational program of DV should be set to improve students' clinical performance.

Key Words: Domestic violence, Child abuse, Elderly abuse, Undergraduate medical education, Clinical performance

Introduction

Domestic or family violence (DV) is a pattern of aggressive and intimidating behaviors, including physical, sexual, psychological, and financial attacks that occur in a domestic setting [1,2]. It encompasses intimate partner violence, child or elder abuse, or abuse by any member of a household [3]. In recent years, DV cases have been reported frequently, and social interest is increasing worldwide [4–6]. The prevalence of intimate partner violence against women was varied from 15% to 71%

depending on the country. It was the highest in rural area undeveloped countries such as Ethiopia [4]. The pooled prevalence rate for overall elder abuse was 15.7% with 11.6% (range, 8.1% to 16.3%) for psychological abuse [5].

Physicians need to deal with patients of DV in the clinic very carefully [7]. Physicians frequently encounter DV in various medical clinics, including family medicine, the emergency department pediatrics, obstetrics and gynecology, surgery, etc. [7]. Thus, dealing with DV is a part of competency for medical school graduates [8]. Training about DV needs to happen at university level [9]. Domestic violence is one of core learning outcomes [10] and is one of the key items of the National Medical Licensing Exam in Korea [11].

It is quite a difficult and complex task to help patients who are suspected of being victims of DV as it is usually combined with emotional, legal, and ethical problems along with a physical illness or injury. Physicians should know and follow ethico-legal standards about DV. Furthermore, to solve DV problems, communication skills, including rapport building to let patient disclose and negotiate about treatment, is necessary. Physicians should consider the psychosocial status and perspectives of the patients and perpetrators to build rapport as patients may not recognize DV is a serious social issue or may not want to disclose DV to doctors due to psychological, social, and health system factors [12].

Previous studies on DV education for medical students focused on DV education programs, including the curriculum [8,13,14], teaching and learning strategies [15,16], and assessing knowledge or abilities [17,18] for understanding and detecting DV. However, little information is currently available on the clinical performance of medical students in encounters with patients experiencing DV.

In this study, we developed standardized patient (SP) stations of DV cases and evaluated the status of students'

clinical performance to suggest several ideas to improve students' performance in DV. To be specific, first, students' clinical performance in DV station was compared with that in the other SP stations. Second, we analyzed the students' performance pattern in the DV station and determined the strong and weak points in their performance. Using these findings, we discuss the educational implications and suggest educational strategies to improve students' performance in DV assessment.

Methods

1. Subjects

This study was approved by the Dong-A University Institutional Review Board, Korea (IRB approval no., 2-104709-AB-N-01-201710-HR-048-02). The subjects of this study were the scores of students obtained from DV stations in SP based examination held by Busan-Gyeongnam Clinical Skills Examination Consortium, which is an association of five medical schools in Busan-Gyeongnam region. The examinations were held from December 1st to 3rd in 2014 for the 3rd year students after their core clerkship and from July 18th to 21st in 2016 for the 4th year students after full process of their clerkship. The examination was composed of six stations relating to patient encounters and six stations relating to technical skills. The examinations were performed at three clinical simulation centers of different universities located in Busan. The station environments, training of SPs, and criteria of scoring were standardized. We analyzed 111 scores of 3rd year students and 143 scores of 4th year students tested on the first day of the examinations, as we wanted to avoid the risk of score bias due to information sharing among students. Five universities of the consortium conduct the

curriculum of a 2-year clinical clerkship after 2 years of preclinical integrated curriculum.

2. DV case development

The cases were developed by the case development committee of the consortium. The DV case for the 3rd year students was a child abuse case and the case for the 4th year students was an elder abuse case. In the child abuse case the student was to interview the victim's mother, but in elderly abuse case the student was to interview the victim. Instructions on the station door of each case are presented in Appendices 1 and 2.

A checklist was constructed to categorize the students' ability in history taking, patient education, and communication and interpersonal skills. The items on the checklist were developed based on basic texts from family medicine, emergency medicine, and psychiatry, objectives for evaluation [19,20], ethics objective structured clinical examination scenarios [21], and the guide to clinical performance [22]. The history taking and patient education during the encounter was scored as yes/no.

We selected four SPs who had been trained 20 hours of basic training and minimum of 5 years of experiences to the clinical skills examination. SP trainer of the consortium trained the SPs for total 4 hours for standardization of simulation and ratings. Via mock exam, case developers for this examination confirmed the standardization of the SP, station setting and the evaluation form. SP graded the students for the child abuse

station and a professor graded the students after 1 hour of preceding education for the elderly abuse station.

3. Data analysis

The Cronbach's α value was calculated to determine the reliability of the examinations with IBM SPSS ver. 21.0 for Windows (IBM Corp., Armonk, USA).

We graded the students' scores on a scale of 100 points. The mean scores in relations to DV were compared with those of the other five SP stations tested in the same examination (Table 1).

In order to determine the performance pattern of students in the DV station, we categorized the items of the checklist according to the six domains for a successful DV interview (Tables 2, 3): (1) strategy for patients to disclose DV and building trust (D); (2) DV related history taking (H); (3) checking the perpetrator's psycho-social state (P); (4) checking the victim's physical and psychological condition (V); (5) negotiation and persuasion about further plans with the victim or caregiver (N); and (6) providing information about ethico-legal issues, diagnosis and treatment principles, and support services (I). The D domain contains discussion around confidentiality and questions to open for disclosure about DV. Questions in the H category are to determine who the perpetrator is and confirm who the victim is, and clarify the duration, pattern, and circumstances of the DV. The P domain focused on perpetrator's past and medical history of DV. Questions to check the victim's emotional

Table 1. Scores of 3rd and 4th Year-Medical Students Achieved from Six Stations with Patient Encountering on the Same Examination in Each Year

	3rd year students (2014)						4th year students (2016)					
	Acute abdomen	Oliguria	Dyspnea	Vaginal discharge	Child abuse	Rhinorrhea	Acute abdomen	Consciousness disability (hepatic coma)	Cough	Elderly abuse	Mal-men struation	Back pain
Average	66.1	64.2	64.0	57.3	50.6	48.1	63.8	61.5	60.3	57.1	52.7	49.1
Standard deviation	10.0	14.1	11.9	10.2	13.3	15.0	11.3	10.6	8.2	12.4	9.5	8.3

Table 2. Percentage of Students Who Have Practiced the Items and Interview Category of Each Item of Check List for Child Abuse

No.	Items	Check point of items	Interview category[a]	% of students done
1	I heard that secrecy was guaranteed.	Confidentiality	D	42.3
2	I heard that doctor wanted to help us because the child had a lot of bruises.	Opening interviewee's mind	D	54.0
3	I told that patient's father bit patient.	Define perpetrator	H	98.2
4	I told that patient's father bit patient since he was 6 months old.	Duration of DV	H	49.5
5	I told that patient's father bit patient with a hand or a stick.	Pattern of DV	H	36.0
6	I talked about the circumstances under which patient was bitten.	Circumstances of DV	H	87.4
7	When patient's father bit patient, I could not do anything.	Care-giver's attitude during DV	H	55.9
8	Patient's father bit only patient.	Confirm victim of DV	H	63.1
9	Patient's father has never received treatment for the cause of violence.	Perpetrator's past history	P	4.5
10	There is no sickness (including psychiatric illness) that patient's father has been diagnosed otherwise.	Perpetrator's medical history	P	9.0
11	Nowadays patient has good emotional state and feelings.	Victim's emotional condition	V	40.5
12	Patient eats well and sleeps well.	Victim's physical condition	V	16.2
13	Patient does not have any developmental problem.	Victim's developmental state	V	30.0
14	I heard this situation is to be child abuse.	Inform the situation as DV	I	60.4
15	In the case of child abuse, it was said that the medical person was obliged to report.	State legal duty of doctor to report DV	N	25.2
16	I heard that child abuse is subject to legal punishment.	State illegality of perpetrator	N	16.2
17	I heard that patient and his father needed to be separated.	Further treatment to prevent DV	I	51.4
18	Patient, patient's father and I were invited to consult with mental health department.	Connect facility to treat DV related persons	I	90.0

DV: Domestic violence.
[a]D: Disclosure strategy, H: DV related history taking, P: Checking perpetrator's psycho-social status, V: Checking victim's mental & physical condition, N: Negotiation and persuade, I: Provide information for DV.

and physical conditions were in the V category. The N category contains questions to persuade the interviewee to take further treatment or isolation from the perpetrator, such as by providing warnings about the risk of DV, statements of the doctor's legal duty to report DV, and indicating the illegality of perpetrator's actions. The I category includes questions to inform the situation as DV, protection agencies and facilities to receive mental support. The frequency of each item and category was calculated with the percentage of students who completed it. Students' performance according to the domains is presented as the average score of items belonging to each category from both cases.

Results

The Cronbach's α value for the reliability of the DV station for 3rd year students in 2014 was 0.80 and the value of the examination for 4th year students taken in 2016 was 0.82.

1. Comparison of students' clinical performance in DV station to other stations

As shown in Table 1, both groups of students showed poorer performance in the DV stations compared to other stations. Third year students scored an average of 50.6 ± 13.3 points in the child abuse station, which was the 2nd lowest among six stations. The highest score was

66.1±10.0 obtained in the station with acute abdomen. Fourth year students obtained an average score of 57.1±12.4 in the elderly abuse station, which was the third lowest among six stations. The highest score was 63.8±11.3 relating to acute abdominal problems and the lowest was 49.1±8.3 relating to back pain.

2. Students' performance pattern

Table 2 presents the checklist items and the percentage of students who performed each item in the child abuse station. The items most students completed are: 'define the perpetrator' (98.2%), 'circumstances of the victim bitten' (87.4%), and 'recommend consultation with the mental health department" (90.0%). However, students did not pay attention to the perpetrator's psycho-

pathologic status (category P, 4.5% and 9.5%), or the victim's physical and psychological status (category V, 16.2% and 30.0%). In addition, the students did not declare either the legal duty of the doctor to report the DV or the legal punishment for the perpetrator (category N, 25.2% and 16.2%).

The percentage of students who completed the items on the checklist in the elder abuse scenario is presented in Table 3. The item most students performed is the confidentiality guarantee (81.8%). The students paid little attention to the perpetrator's psychopathologic status (category P: item 7, 17.5%) or the victim's physical and psychological status (category V: item 11, 30.8%). Students did not discuss legal issues (category N: item 14, 16.1%) or consequences when DV is ignored (category N:

Table 3. Percent of Students Who Have Practiced the Items and Interview Category of Each Item of Check List for Elderly Abuse

No.	Items	Check point of items	Interview category[a]	% of students done
1	I told that I came alone.	Check presence of care-giver	V	8.4
2	I heard that the contents of counseling would not disclose to others.	Confidentiality	D	81.8
3	I told that my son beat me for 2 years.	Duration of DV	H	60.1
4	I told that my son drank and beat me about once a week.	Frequency of DV	H	58.7
5	I told that my son was hating and shouting.	Associated actions with DV	H	55.9
6	I told that my son sometimes smashed or threw things.	Other violence of perpetrator	H	62.2
7	He has never received treatment in the cause of violence or verbal abuse.	Perpetrator's treatment history	P	17.5
8	There is no one to help me.	Victim's situation during DV	H	55.9
9	When he was sober after violence, my son is nice.	Perpetrator's action after DV	H	59.4
10	I told that I was not feeling well.	Victim's emotional condition	V	50.3
11	I told that I had never thought about suicide.	Victim's suicidal urge	V	30.8
12	I heard that this situation is to be elderly abuse.	Inform the situation as DV	I	51.0
13	I heard that I can be at risk if the violence got worse.	Warn risk of DV if not treated	N	28.7
14	I heard that it is the duty of the medical person to report this case as elderly abuse.	State legal duty of doctor to report DV	N	16.1
15	I heard that doctor understood my notion that I wanted to bury this situation.	Encourage to open about DV	N	34.3
16	I heard that I could get help from nearby people or the police in a violent situation.	Inform that police can help victim	I	59.4
17	I heard that the relevant agency can help me and I can stay in the protection agency.	Inform protection agency to stay	I	68.5
18	I was recommended to consult with the mental health department.	Inform facility to get mental support	I	50.3

DV: Domestic violence.
[a]D: Disclosure strategy, H: DV related history taking, P: Checking perpetrator's psycho-social status, V: Checking victim's mental & physical condition, N: Negotiation and persuade, I; Provide information for DV.

Table 4. Clinical Performance of Students on DV according to the Interview Categories

Interview category	No. of item		Average % of students done
	Child abuse	Elderly abuse	
D: Disclosure strategy	1, 2	2	59.4
H: DV related history taking	3, 4, 5, 6, 7, 8	3, 4, 5, 6, 9	62.4
P: Checking perpetrator's psycho-social status	9, 10	7	10.3
V: Checking victim's mental & physical condition	11, 12, 13	1, 10, 11	29.4
N: Negotiation and persuasion	15, 16	13, 14, 15	24.1
I: Provide information on DV	14, 17, 18	8, 12, 16, 17, 18	60.9

DV: Domestic violence.

item 13, 28.7%), and they showed less empathy (category N: item 13, 14, and 15, 28.7% and 34.3%).

The performance pattern was analyzed by categorizing the interview items shown in Table 4. There was no difference between 3rd & 4th year students in the performance pattern. Students performed moderately in three categories, namely "DV related history taking" (63.1%), "providing information about DV ethico-legal issues and services" (60.3%), and "strategies for patients to disclose DV and building trust" (59.4%). However, fewer students performed the items in the three categories of "checking the patient's physical and psychological condition" (33.6%), "negotiation and persuasion about further plan with patients" (24.1%), and "checking the perpetrator's psycho-social state" (10.3%).

Discussion

Students' performance in DV cases was investigated for the first time in Korea in the present study. The results of this study showed that students' performance in the DV station was poor compared to other stations. The students were good at DV related history taking, strategies to help patients disclose DV, and providing information about DV. However, most students ignored determining the physical and psychological condition of the victims and perpetrators. They also did not focus on negotiation and persuasion. Their interviews with the victims of DV were not structured and their explanations and planning were not skillful in terms of communication and interpersonal skills.

In this study, students' clinical performance was poor in the DV station compared to the others, especially in considering psychosocial status and negotiation. In addition, students received lower scores in communication and interpersonal skills than those from the other stations. The students' interviews were not organized enough. There may be several causes for the students' poor performance. First, students might not have been educated enough through their curriculum to deal with DV victims. Second, students might have much less experience in DV cases than other cases during their clerkship. Third, students might have no opportunities to acquire a high level of communication skills to interview suspected victims even though DV education was conducted. The authors think that students were less prepared for DV and became embarrassed during the interview with DV victims. If preparation and supervision is not adequate, physicians may suffer the stress of caring for abused patients, and later experience countertransference, compassion fatigue, or burnout [23]. They need more experience in encountering DV patients in clinics or even simulated environments during their curriculum. In addition, medical educators should pay more attention to DV education being integrated with

communication skills. However, there could be another causes according to the school context, it would be helpful to investigate the education program for DV for further research.

The general pattern of students' performance in DV stations was not 'patient centered' but 'event centered' in this study. The students defined the perpetrator, focused on the violence itself, and finally suggested a solution, such as psychological counseling. This kind of pattern was also defined among primary healthcare clinicians in England [1,24]. Most general practitioners considered their roles in DV mainly as identifying DV and providing help by referral to external agencies. Some thought that they did not have to address all other aspects, as it was not their role. It is very important to perform patient centered interviews to establish all indications of DV and make a decision with partnership to provide support and safety to the patient. Therefore, medical educators should focus on learners' perspectives about DV during education and emphasize the importance of patient centered interview.

In this study, many students did not discuss legal issues. However, special case law regarding the punishment of home violence crime and laws regarding home violence prevention and victim protection had already been established in 1997 in Korea. DV is defined as a criminal act [25] and all medical personnel who detect DV have the responsibility to report it [26]. It is not clear whether the students understand this responsibility enough as they may not say anything in the exam contexts. However, educating students about DV-related legal issues is recommended, as legal responsibility is important to detect and prevent DV. Therefore, medical educators should also focus on ethico-legal issues about DV during education.

In real clinical contexts, physician should be suspicious about DV when they meet any patient with physical problems. However, detection rates by physicians and medicals students are reported to be poor [23]. Fisher et al. [16] applied simulation to teach identification of elderly abuse to medical students. They reported several barriers to diagnosing DV by students, such as low index of suspicions, overly optimistic regard, and confused nomenclature. They concluded that clinical teachers who deliver DV education should focus on increasing students' index of suspicion. Therefore, education and examination on DV should initially focus on developing the ability to recognize DV [23].

DV recognition and treatment is an integral component [27] of medicine and should be taught in an integrated way, including patient safety, professionalism, ethics, laws, and communication skills. Intervention during clerkship was reported to be effective in previous studies. Didactic instruction to preclinical medical students improved the knowledge and attitudes on DV during clinical rotation [28]. Haist et al. [29] reported that a four-hour workshop dealing with four different cases of DV during 3rd year clerkship improved the knowledge and skills of medical students about DV.

In conclusion, 3rd and 4th year medical students showed event oriented clinical performance but not a patient centered interview with victims or caregivers in the station of DV. It is necessary to develop integrated educational programs dealing with various cases of DV to improve students' performance in the contexts of DV.

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Appendix 1. Candidate Instruction on the Station Door for 'Child Abuse'

Three-year-old boy, Kim Sung-Hoon, was injured and received treatment after visiting the emergency room with his family. A fracture of his right arm required a plaster bandage, and physical examination revealed bruises and contusions on his upper body and arms from different times (refer to medical record).

<Vital signs>	
Blood pressure: 100/60 mmHg	Pulse: 96/min
Respiration rate: 24/min	Body temperature: 36.6°C
Height: 95 cm	Body weight: 12 kg

Candidates, considering child abuse
- Take history regarding domestic violence from patient's mother.
- Discuss his diagnosis and future treatment plans with his mother.

Appendix 2. Candidate Instruction on the Station Door for 'Elder Abuse'

A 65-year-old woman, Kim Young-Soon, came to the hospital because her right breast was sore. She was diagnosed with a rib fracture. Multiple bruises were found on both her wrists and arms.

<Vital sign>	
Blood pressure: 120/80 mmHg	Pulse: 70/min
Respiration rate: 18/min	Body temperature: 36.6°C
Height: 160 cm	Body weight: 50 kg

Candidates, considering domestic violence
- Take history regarding domestic violence.
- Perform physical examination in relation to domestic violence.
- Discuss the diagnosis and future treatment plans with the patient.