

Supplemental Table 1. Summary of Themes, Sub-themes, and Representative Quotations from Focus Group Interviews

Question	Theme	Sub-theme	Representative Quotations
<p>1. Do the core keywords reflect the main topics or core concepts of patient-safety which had been studied in the field of nursing?</p>	<p>main topics are well revealed</p>	<p>Practice, environment, system, and culture are revealed as main topics</p>	<p><i>Once I can identify the hospital and units within hospital. Next, practice, prevention, patient safety. And then medication, reporting, system, barriers, etc.. Through the large circle and the thickness of the connecting line, I could see that a lot of studies on medication errors and practical improvement were conducted to prevent harm of patients admitted to the hospital. (participant 4)</i></p>
		<p>Approaching from a comprehensive perspective</p>	<p><i>In order to prevent harm to patients, it seems that comprehensive approaches such as various practices, environments, and reporting are being dealt with as the subject of patient safety nursing research. (participant 6)</i></p>
	<p>main topics are not well revealed</p>	<p>reporting is one of main topics</p>	<p><i>Reporting, error, and medication were linked. Hospital certification places importance on patient safety issues, so reporting ultimately needs to be researched. (participant 9)</i> <i>Reporting is important for patient safety as well, but it is one of the areas that are very important in clinical practice because continuing to emphasize it greatly affects legal issues as well. Although it has the purpose of preventing serious harm of patient, I think there is a point that is emphasized because it is a measure to legally protect institutions and nurses in the event of such an accident. Among the important parts is the nursing record. (participant 10)</i></p>
<p>2. Is Kim's typology useful as a framework, analytic device, for</p>	<p>Kim's typology is useful</p>	<p>Not clearly revealed due to the dense connection structure around commonly used terms</p>	<p><i>Because "patient" is a term commonly used in nursing research, it is impossible to grasp the main topic of patient safety nursing research through a network structure in which many core keywords are too densely connected around "patient." (participant 7)</i></p>
		<p>the client–nurse domain required further research</p>	<p><i>I think that classification by Kim's typology is useful in identifying insufficient research areas. That's why I think that the client-nurse domain is actually very important to patient safety in clinical practice. Depending on how much you have communicated with the</i></p>

<p>exploring the knowledge structure of patient safety?</p>			<p><i>patient and how much trust you have, the patient can quickly give you feedback on the nurse's performance..., and if patients feel strange change after IV medication, they prefer to talk with a kind nurse... rather than a blunt nurse ... That is why the client-nurse domain is important for patient safety, but these concepts are a little... difficult to measure, and... this domain itself is a little neglected part...I think Kim's typology is useful because it allows us to identify which domain needs more research. (participant10)</i></p>
<p>3. Are the themes extracted by the two researchers from each group appropriate?</p>	<p>Kim's typology is not useful</p>	<p>many studies conducted on the practice domain making classification difficult</p>	<p><i>My classification results were similar, a lot of research was performed in the practice and client domain, and the client- nurse domain was small. I think there are fewer keywords for interaction, contact and communication. (participant 5)</i>  <i>For example drug, it is not clear whether it is what happens in the client-nurse domain when medication is taken or whether it is in the domain of practice or the environment in which the drug is provided. It was difficult to determine which domain the core-keywords belonged to from the keywords alone. (participant 2)</i></p>
		<p>No domain to classify</p>	<p><i>I also found it difficult to classify students, but this is not a subject, but it is not a practitioner or an environment, so I thought this was a little difficult to distinguish. (participant 6)</i></p>
		<p>many of the core-keywords belonged to more than one domain</p>	<p><i>In the case of communication, of course, communication is in the client-nurse domain, but in fact, communication occurs in the domain of practice. I think the communication can be belonged in behavioral process of practice domain, because communication should be necessary to perform nurses' work anyway. So I think it is able to classify into several domains depending on the concept. (participant 11)</i></p>
	<p>Hierarchical cluster analysis is meaningless</p>	<p>too large concept</p>	<p><i>I don't think it makes sense to I don't think it makes sense to keep dividing into subgroups like this. I think it would be appropriate to give up hierarchically clustering in each step and conduct network analysis with only some sub-concepts in patient safety. (participant 7)</i>  <i>Patient safety is a very big concept, so I think how about reducing</i></p>

		<i>the scope a bit. (participant 3)</i>
	Hierarchical structure different from expected	<i>The definition of patient safety itself is to minimize patient harm. So, I think it's an activity. If this network analysis is a study on how patient safety is viewed and researched in the nursing field, and what is the knowledge structure for patient safety, I thought that the knowledge structure of patient safety should be concentrated as a practice for patient safety. However, I reviewed the hierarchically clustered keyword groups and themes extracted by researchers, and results was completely different than I expected. (participant 1)</i>
Hierarchical cluster analysis is meaningful	useful for identifying detailed topics	<i>I think it is appropriate to do hierarchical cluster analysis up to step 3. First of all, patient safety is a very big topic, so I think more than 3 steps should be taken to explore detailed research topics. (participant 4)</i> <i>I think that the cause of patient harm and what activities to prevent each cause is the core knowledge structure of patient safety nursing research. So, by this hierarchical clustering, I think it will reveal the cause of each harm and the activities that can prevent it. (participant 6)</i>
The naming is appropriate	The naming is appropriate	<i>Although somewhat heterogeneous keywords belong to one group, I think they are mostly appropriate. (participant 11)</i>
The naming is appropriate	Inappropriate as a naming for the group of keywords	<i>I think "4-1 Factors related with error" is inappropriate. The error-related factors should include human and system factors, such as organizational culture, environment, and human characters. But the transition and prescribing are causes of errors, so I think this naming of theme is a little inappropriate. (participant 1)</i> <i>I am a APN with expertise in wound care These days, the term pressure injury is used rather than pressure ulcer. In patient safety, those indicates not only ulcers, but damaged skin changes, so it is correct to use the term pressure injury. (participant 10)</i>
	Naming that connects two disparate terms with '&' is inappropriate	<i>5-3-1 Threat &amp; Effectiveness of Patient safety activity was named by linking threat and effectiveness with "&amp;", but these two</i>

	The naming is difficult	Depend on participant's focus	<i>The theme extracted from the group of keywords depends on participant's focus... participant's field of research or practice. (participant 3)</i>
		Heterogeneity of some keywords within one group	<i>In my opinion, the keywords presented here are not words that have only one side, so the reason why the keywords belonging to the "patient" group are diverse is that the problem of patient safety may actually be a problem of the patient itself, or there may be a problem of the medical staff or the environment. I think it is because the words in the group are studied by considering those three things together. Since the nurse performs patient safety nursing while considering the three aspects at the same time in the clinic, the keywords related to this are grouped together. It's the same, and the meaning of the word "patient" itself is a very broad and inclusive word, as is care and practice, um... I'm in a difficult situation to structure the contents of patient safety. (participant 11) I think "2-4 Prevention activity" is heterogeneous to "2 preventable patient harm." (participant 4)</i>