Compare the Differences of Nurses’ Perceptions of Risk Factors and Effective Preventability for Injurious Falls between USA and Taiwan

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Learner objectives:

- Understanding cognitive differences of clinical nursing staff to the risk fall factors of occurrence frequency and prevention effectiveness.

- Increasing of clinical nursing staff to the cognition of risk factors for falls and the expansion of preventive measures.

Conflict of interest: No conflict of interest.

Have employer and whether any sponsorship or commercial support: No any sponsorship or commercial support.
Outline

✦ Background
✦ Objective
✦ Methods
✦ Result
✦ Discussion
✦ Conclusion
Background

-The risk factor of fall is complicated, each fall may contain 7 to 9 fall risk factors on average (Keith et al., 2008), ex: bad environmental design, the slippery ground, ground cracks, poor lighting, patients’ bad mental state, the special need of defecation, the handicapped, taking anticonvulsant, sedative and anti-hypertensive medicine, those who has fall history and needs others’ assistance, etc. (Haines, Bennell, Osborne, Hill, 2004; Evans, Hodgkinson, Lambert, & Wood, 2001; Vieira, Freund-Heritage, & da Costa, 2011).

-The incident of fall in U.S.A. is 3-5‰ per year and 1-3% patients leading to fractures. (Oliver, Healey et al., 2010)

-The fall incidence of inpatients in Taiwan is up to 24.1%. (Ministry of Health and Welfare, 2014)

-7.5% elderly inpatients experienced fall. (Schwendimann, Buhler, De Geest, & Milisen, 2008)
Preventive strategies

- the medicine prevention (Coussement, et al., 2008)
- Installed alarms beside the beds
- increasing the number of patient visits
- hiring temporary personnel
- arranging patients to stay close to the nursing station
- limiting patients’ activity (Shever, Titler, Mackin, & Kueny, 2011).
- higher nursing staff
- the magnet hospital (Everhart et al., 2014).
The importance of nurses’ perception to improve patient care

- nurses perceived more factors of patient safety can help to improve the quality of patient Safety (Ridelberg, Roback, & Nilsen, 2014).

- nurses’ cognition about what is the best way of fall prevention and measures are not the same (Tzeng & Yin, 2013).

Currently research on patient falls in hospitals come from the medical records or incident reports. However, these data may be limited according to the file and missing details.

Nurses are the most frequently medical staff contacting with the patients, but their opinions are seldom to use in those reports.
Objective

This study described and compared the nurses’ perceptions of risk factors (RF) and effective preventability (EP) for injurious falls between USA and Taiwan.
Methods

✧ A cross-sectional survey study.

✧ Setting and data collection
  ✧ 5 hospitals in USA and one medical center in Taiwan.

✧ Participants
  ✧ Inclusion criteria (aged ≥21 years, employed as a staff nurse ≥12 months, working 20 hours/week, providing direct patient care, and having an RN license were recruited in this study.

✧ Instrument
  ✧ A 5-point scale questionnaire which developed by Dr. Tzeng (2011) and its Chinese version were used to collect data in USA (81 items) and in Taiwan (83 items), respectively.

✧ Statistics
  ✧ Descriptive statistics: mean, SD, percentage, and rank.
Result

✿ This research collected 785 nurses as subjects.

 ✿ USA=560, TW=225

 ✿ Female：90.2% , Male：9.8%

 ✿ The average working year：8.28 years

 ✿ Age: 25-45 year old is most (56.3%), 45-64 year old is second (26.8%).

 ✿ The working place : Non-critical acute care unit: 57.8%, critical unit: 20.2%

 ✿ 63% RN had received fall prevention education, but 7.4% of the group hadn’t have the education for at least one year.
## RF and EP in USA

<table>
<thead>
<tr>
<th>Rank</th>
<th>RF</th>
<th>Mean±SD</th>
<th>EP</th>
<th>Mean±SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Confusion</td>
<td>3.20±1.13</td>
<td>Bed brakes not in locked position</td>
<td>3.94±0.83</td>
</tr>
<tr>
<td>2</td>
<td>Altered or limited mobility/gait problems</td>
<td>3.17±1.07</td>
<td>Age less than 25 y/o</td>
<td>3.90±0.86</td>
</tr>
<tr>
<td>3</td>
<td>Disorientation</td>
<td>3.15±1.12</td>
<td>Poor lighting</td>
<td>3.89±0.79</td>
</tr>
<tr>
<td>4</td>
<td>Inability to follow safety instructions</td>
<td>3.13±1.12</td>
<td>Inappropriate or no footwear worn by patient</td>
<td>3.89±0.78</td>
</tr>
<tr>
<td>5</td>
<td>Alzheimer’s disease</td>
<td>3.12±1.08</td>
<td>Bed not kept in low position</td>
<td>3.88±0.82</td>
</tr>
<tr>
<td>6</td>
<td>Impaired balance</td>
<td>3.11±1.09</td>
<td>Age 25 years or older and less than 45 y/o</td>
<td>3.88±0.80</td>
</tr>
<tr>
<td>7</td>
<td>Fall history</td>
<td>3.08±1.13</td>
<td>Slippery or wet floor surfaces</td>
<td>3.85±0.81</td>
</tr>
<tr>
<td>8</td>
<td>Age 85 years or older</td>
<td>3.07±1.10</td>
<td>Improper use of side rails</td>
<td>3.85±0.81</td>
</tr>
<tr>
<td>9</td>
<td>Impulsiveness</td>
<td>3.04±1.15</td>
<td>Clutter (e.g., personal belongings,, garbage)</td>
<td>3.84±0.77</td>
</tr>
<tr>
<td>10</td>
<td>Impaired muscle strength</td>
<td>3.02±1.09</td>
<td>Tripping hazards</td>
<td>3.84±0.78</td>
</tr>
</tbody>
</table>

- **High RF and low EP**: ”confusion”, ”disorientation”, ”inability to follow safety instructions”, ”Alzheimer’s disease” and ”impulsiveness”.
- **Low RF and high EP**: “age less than 25 y/o”. 
## RF and EP in TW

<table>
<thead>
<tr>
<th>Rank</th>
<th>RF</th>
<th>Mean±SD</th>
<th>EP</th>
<th>Mean±SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Altered or limited mobility/gait problems</td>
<td>3.41±1.19</td>
<td>Slippery or wet floor surfaces</td>
<td>3.78±1.04</td>
</tr>
<tr>
<td>2</td>
<td>Increased toileting needs</td>
<td>3.35±1.16</td>
<td>Improper use of side rails</td>
<td>3.77±1.04</td>
</tr>
<tr>
<td>3</td>
<td>Fall history</td>
<td>3.30±1.22</td>
<td>Age less than 25 y/o</td>
<td>3.71±1.32</td>
</tr>
<tr>
<td>4</td>
<td>Postural hypotension</td>
<td>3.28±1.14</td>
<td>Bed brakes not in locked position</td>
<td>3.70±1.10</td>
</tr>
<tr>
<td>5</td>
<td>Confusion</td>
<td>3.26±1.24</td>
<td>Poor lighting</td>
<td>3.66±1.03</td>
</tr>
<tr>
<td>6</td>
<td>Vertigo or complaint of dizziness</td>
<td>3.24±1.17</td>
<td>Tripping hazards</td>
<td>3.65±1.05</td>
</tr>
<tr>
<td>7</td>
<td>Time of day: Night</td>
<td>3.24±1.33</td>
<td>Bed not kept in low position</td>
<td>3.65±0.98</td>
</tr>
<tr>
<td>8</td>
<td>Impaired balance</td>
<td>3.23±1.32</td>
<td>Clutter (e.g., personal belongings, garbage)</td>
<td>3.64±1.07</td>
</tr>
<tr>
<td>9</td>
<td>Impaired muscle strength</td>
<td>3.22±1.29</td>
<td>Lack of handrails in patient room bathroom</td>
<td>3.63±1.07</td>
</tr>
<tr>
<td>10</td>
<td>A desire for independence</td>
<td>3.18±1.29</td>
<td>Age 25 years or older and less than 45 y/o</td>
<td>3.62±1.23</td>
</tr>
</tbody>
</table>

- **High RF and high EP**: “no care-giver accompany”.
- **High RF and low EP**: “confusion” & ”a desire for independence”.
- **Low RF and low EP**: “Vitamin D deficiency”.
Compare the Differences of Nurses’ Perceptions of RF for Injurious Falls between USA and Taiwan

- No significant difference on the score of RF (t= -0.199).
- Consensus: “altered or limited mobility/gait problems”, “confusion”, “impaired balance”, “fall history”, and impaired muscle strength”.
- Non-consensus: ”disorientation”, ”inability to follow safety instructions”, ”Alzheimer’s disease”, ”age 85 years or older”, ”impulsiveness”, ”increased toileting needs”, ”postural hypotension”, ”vertigo or complaint of dizziness”, ”time of day: night” and ”a desire for independence”.
Compare the Differences of Nurses’ Perceptions of EP for Injurious Falls between USA and Taiwan

✧ A significant difference on the score of EP (t= 12.627, p<0.000).

✧ Consensus : ”bed brakes not in locked position”、”age less than 25 y/o”、”poor lighting”、”bed not kept in low position”、”age 25 years or older and less than 45 y/o”、”slippery or wet floor surfaces”、”improper use of side rails”、”clutter (e.g., personal belongings,, garbage)” and ” tripping hazards”.

✧ Non-consensus : ”inappropriate or no footwear worn by patient” and ”lack of handrails in patient room bathroom”.
Discussion for RF

✴ 50% consensus.
✴ RN perceived the frequency of RF was similar.
✴ Consensus : the patient's physical status, mental disorders and falls history.
✴ Non-consensus of factors “time of day: night” and “a desire for independence” in TW, caused by:

✴ The night shift staffing more less day Shift
✴ The high risk patients don’t relocating closer to the nurses’ station
✴ Taking accompany rest
✴ Worried accompanied dislike
Discussion for EP

- 80% consensus.
- RN perceived the EP was difference. (USA>TW)
- Consensus EP: environment and equipment
- Non-consensus of factors” inappropriate or no footwear worn by patient” in USA and ”lack of handrails in patient room bathroom” in TW, caused by:
  - The USA hospital provided and requested the patient to wear "slip socks".
  - Taiwan patients refused accompany when they went to toilet.
Discussion for RF vs. EP

- RN perceived the frequency of RF and EP were different, may be caused by:
  - RF of injurious falls are multiple factors, which are needed to add other medical members, such as physicians, pharmacists, physical therapists etc.
  - It is obvious and self-control that the risk factor of EP improved effect.
Discussion~” No care-giver accompany”

 האינטרנט, “family” hospitalized as "accompanied“ is a common. If not, it will be viewed as not good relationship or the person isn’t important. The function of the accompany is not accompanying only, it also helps patients to meet all needs.

Different caring mode: In America, depending on inpatient’ needs and providing different assistance; but in Taiwan, nurses are the primary caregivers so that they need inpatient accompany’s assistance.
Discussion~ ”Use NSAIDs”

✦ The reason why those medicine might be used usually

✦ Habit: these medicine has other effect such as anti-inflammatory or being influenced by insurance system.

✦ Worrying patients are addicted to narcotic analgesics.
Conclusion

＊ The injurious fall risk factors are multiple and complicated. Two countries' nurses still need more consensus on the patients' environment improved and the cognition of the patients' family to the fall risk factors.

＊ Taking team-work into consideration, and making nurses have more time on taking care of patients such as the physical therapist.

＊ For fall risk factors, there are still many different perspectives. No matter clinical care or the education both are required to be re-emphasized in the future.
Thanks for your attention!

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