

Does Polypharmacy have an impact on the rate of hospitalizations and hospital costs in acute care of adults aged over 65 years in New Zealand?

Introduction:

The use of multiple medications (five or more), often termed as polypharmacy is recognized as an increasingly serious problem in the current health care system today (Health Navigator, 2016). As polypharmacy is a consequence of having several underlying medical conditions, it is much more common in the population of adults over the age of 65 as, as we get older we become more susceptible to multi-morbidity.

Extent of Polypharmacy:

Statistics show that the prevalence of polypharmacy in people over the age of 65 are: 10% <1 medication, 36% 2-4 medications and 56% 5 or more medications (HQSC New Zealand, 2017).

The frequency of adverse drug events increases by 58% when people are prescribed 5 or more medications.

Admission to Hospital/Implications on Health Care Costs:

A 2006 study showed of the 17,806 adverse drug events recorded, 15,254 required hospital admission. The amount of admissions increased with age (70-85) (Clarke & Ross, 2006). It is evident that polypharmacy has an effect on increasing the chances of adverse drug events, which directly increase the rate of hospitalizations.

- It is apparent that if someone >65 is suffering from any of the more serious symptoms than there would be a need for increased intervention in order to aid recovery.
- It can be argued that the increase in health care cost is a direct result of the increase in the length of inpatient stay. The longer a person is in hospital the more it will cost due to an increased use of resources.

How increasing age influences the negative effects of medications:

1. Medications being highly concentrated in discrete parts of our bodies due to poor circulation
2. Medications remaining in our systems longer than needed as absorption rates are slower
3. The liver shrinks resulting in decreased cardiac output which effects metabolism
4. Decreased renal function affects how drugs are excreted.

These adverse drug events ultimately result in admission to hospital due to the symptoms that are associated with the breakdown in these body processes.

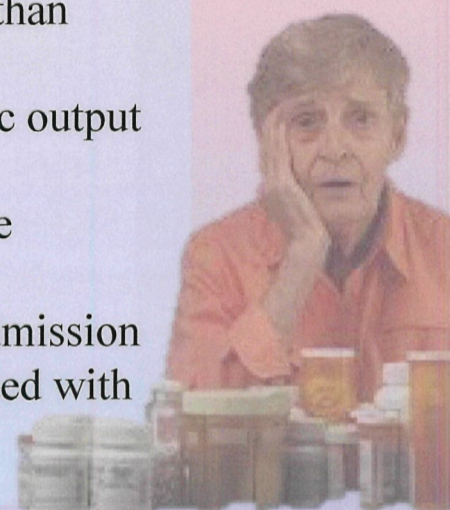


Figure 1: Mims Today. (2017)

Recommendations:

- When prescribing medications health professionals need to be consider 'Do the benefits outweigh the risks?'
- One prescriber per patient. As we get older the importance of a single prescriber grows due to having complex co-morbidities that need a stricter, more regularly reviewed medication regimen. Oversight of medication regimens by a single prescriber allows for more consistent advice and decision making (Hanger, 2012).
- Nurses providing effective patient education. Nurses need to have a good understanding of medications so that they can provide effective education.
- Nurses also have the opportunity to reduce the number of prescribed drugs a patient may be taking through practical measures such as advising lifestyle changes that may reduce the need for medication and combat the side effects.
- As people get older we also tend to have cognitive problems in which it may become more difficult to remember to take medications. A strong recommendation for nurses is to provide necessary prompts and aids to make medication adherence easier.

References:

- Clarke, R. and Ross, S. (2006). *Polypharmacy*. Retrieved from: https://bpac.org.nz/resources/campaign/polypharmacy/bpac_polypharmacy_poem_2006_pf.pdf.
- Hanger, D. (2014). *Polypharmacy in primary care: Managing a clinical conundrum*. Retrieved from: <https://bpac.org.nz/BPJ/2014/October/polypharmacy.aspx>.
- Health Navigator New Zealand. (2016). *Polypharmacy- explained*. [online] Available at: <https://www.healthnavigator.org.nz/videos/p/polypharmacy-explained/>.
- Health Quality & Safety Commission New Zealand. (2017). *Polypharmacy atlas consumer summary*. Retrieved from: https://www.hqsc.govt.nz/assets/Health-Quality-Evaluation/Atlas/PolypharmacySFOct17/Consumer_summary_polypharmacy_2017.pdf.

Submission Rationale:

I have chosen to express my clinical issue in a poster form. I believe by doing this I can portray and express the contents on a piece of paper with eye attracting colour and pictures with the use of words that have been carefully laid out so that the message is understood by the readers wanting to know more about the issue.

A poster is easily accessible and can be placed around healthcare facilities, including client waiting areas to reach a wide audience (Schneider & Whitehead, 2016). A written submission would only reach a small audience and take significant time for findings to be distributed to healthcare professionals and consumers, in contrast to a poster which is readily available (Schneider & Whitehead, 2016).

When presented at a forum or conference, posters are interactive and provide the viewers with a concise overview of the research, which can be supplemental with informal discussion to enhance knowledge and inform practice (Ilic & Rowe, 2013; Perrin 2015; Schneider & Whitehead, 2016). Posters are visual communication tools that allow research to be presented in a clear and concise format (Perrin, 2015; Schneider & Whitehead, 2016; University of Texas at Austin, 2017).

References:

Ilic, D., & Rowe, N. (2013). What is the evidence that poster presentations are effective in promoting knowledge transfer? A state of the art review. *Health Information & Libraries Journal*, 30(1), 4-12. doi:10.1111/hir.12015

Perrin, R. (2015). *Pocket guide to APA style* (5th ed). Stamford, CT: Cengage Learning.

Schneider, Z., & Whitehead, D. (2016). Writing and presenting research findings for dissemination. In Z. Schneider, D. Whitehead, G. LoBiondo-Wood, & J.

University of Texas at Austin. (2017). Poster guide. Retrieved from https://ugs.utexas.edu/our/poster/create_message/organize

Figure 1: Mims Today. (2017). Retrieved from <https://today.mims.com/in-conversation--geriatrician-dr-carol-tan-speaks-about-the-dangers-of-polypharmacy-in-elderly-patients>

PECOT/ Search Question:

	Information relating to question	Explanation
Population	Older adults aged over 65 years of age in New Zealand	People of all ages can be exposed to polypharmacy. However, I have chosen the population to be over 65 because they are a particularly vulnerable age group. I have also had plenty of exposure and experience with this age group throughout my placements.
Exposure (intervention)	Polypharmacy influencing admission to hospital for adults aged over 65 in an acute hospital setting	I will look at articles that discuss the prevalence of polypharmacy in adults aged over 65 and the effects that it has on the rate and cost of hospitalizations.
Comparison (control)	Older adults aged over 65 with a similar diagnosis yet are not exposed to polypharmacy.	By comparing to someone with a similar diagnosis yet not exposed to polypharmacy we are able to find out how much polypharmacy has on the rate of hospital admissions and therefore increases hospital costs.
Outcome	Polypharmacy is addressed and there are interventions put in place to decrease the rate of hospitalizations for adults aged over 65.	Since I'm wanting to know if polypharmacy has an impact on the rate of hospitalizations. I would hope to find that one has higher rates than the other between the Exposure and Comparison variables.
Time	The time that patients remain in an acute hospital setting.	-

Whitehead, D. (2013). *Searching and reviewing the research literature*. In Z. Schneider., D.