



Medications Without Harm?

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The World Health Organization (WHO) defines an adverse drug reaction (ADR) as a response to a medicine which is noxious and unintended, and which occurs at doses normally used in man for prophylaxis, diagnosis, or therapy.¹ ADRs can vary from a common mild side effect to a more severe anaphylaxis reaction. ADRs are considered one of the leading causes of morbidity and mortality in healthcare² and, therefore, are considered an important outcome indicator in healthcare research. In some countries, the percentage of patients admitted to hospital due to ADR is reported at 12.8%.³ A study in Sweden found that 3% of all deaths are due to ADR.⁴ In addition, ADRs have a high impact on healthcare resources as services must be available to manage any ADR-related complications.

However, many ADRs are considered preventable using various interventions.^{5,6} The frequencies of preventable ADRs vary considerably. A Swedish study of 1255 spontaneously reported ADRs found that 14% were preventable.⁷ A recent study conducted in a teaching hospital in Oman highlighted this issue.⁸ The study aimed to determine the incidence of preventable ADRs due to antimicrobials. Preventability was identified using modified preventability criteria adopted from Schumock and Thornton.⁹ A total of 562 ADR reports were analyzed during 2016; 23% (n = 133) were due to antimicrobials, and 13% (n = 17) were preventable. The preventable ADRs occurred because of medication errors or substandard care. Moreover, a randomized controlled study in 587 patients was also conducted in Oman to evaluate the impact of medication reconciliation and counseling by a pharmacist on clinical outcomes 30 days post-discharge. The study revealed that preventable adverse drug events

(ADEs) were significantly lower in the intervention arm compared to the standard care group (9.1% vs. 16%; $p = 0.009$).¹⁰ These alarming results highlight the need for improvements in systems and processes in all healthcare facilities.

As a result, efforts must be made to address the problem and reduce the harm associated with medications use. Examples of such efforts include, but are not limited to, patient counseling, medications reconciliation, and interventions to improve medication adherence and inappropriate polypharmacy. Polypharmacy is one of the key areas highlighted by the WHO in their 2017 challenge,¹¹ which also needs to be addressed to reduce the harm associated with poor medication management. Moreover, studies have shown that polypharmacy is associated with the occurrence of ADEs.¹² The prevalence of polypharmacy among elderly discharged patients in Oman was 76% and was associated with a number of comorbidities.¹³ This is of major concern as Oman's elderly population is expected to increase and, therefore, the incidence of ADRs will also rise.¹⁴ Implementing such interventions in healthcare facilities will require resources; however, the outcome of such services will be more rewarding especially in reducing hospitalization and ultimately reducing the financial burden associated with ADRs.

ADRs represent a significant public health concern that is, in many cases, preventable. Unfortunately, it is an under-reported burden that adversely affects patients, healthcare providers, and the economy. We must implement multilevel improvements and patient safety initiatives. Physicians and pharmacists should review the patients' medication list at each patient visit and adjust medications accordingly to decrease the risks of ADRs. They should also address non-adherence and avoid using medications with

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significant interactions. Such strategies will reduce the incidence of ADRs and will ultimately produce “Medication Without Harm” (the WHO theme for the third global patient safety challenge, an initiative to reduce harms related to medications by 50% over five years).¹¹ Working together as a team within each healthcare facility and nationally will hopefully support Oman in its journey towards this goal.

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