

Burns

The neglected epidemic in Oman

Sultan Al-Shaqsi¹ and *Deena Alasfoor²

الحروق

وباء مهمل في عمان

سلطان الشقصي و دينا العصفور

BURNS, WHETHER INTENTIONAL OR non-intentional, are increasingly emerging as a worldwide problem. The World Health Organization (WHO) states that 195,000 deaths annually are caused by fire alone, and many more people are left disabled or permanently injured.¹ However, the WHO also notes that there is not enough data to determine the number of deaths caused from other types of burns such as scalding, electrical burns and other burns, thus indicating that the true figure is much higher.² Chandran *et al.* found that the burden of intentional injuries is disproportionately higher in low and middle income countries. Data analysis of the Global Burden of Diseases (GBD) project shows that 9% of the deaths in the Middle Eastern region were caused by fire; whereas the rate of disability-adjusted life years (DALYs) was 2,825 per 100,000 life years, comparable to that of Southeast Asia and Africa, and almost double the DALYs caused by injuries in developed countries. The analysis provides an indication of the magnitude of the problem, although it does not classify burns specifically.³

Understanding the magnitude of burns as a public health problem, its distribution in the community and the risk factors that accompany it, is an important step in establishing intervention strategies. Such interventions could include raising awareness, improved legislation, and the careful engineering and planning of work places and houses in order to reduce the incidence of burns, the severity of burn-related injuries and their consequences.⁴

It is important to recognise burns as a public health problem, both in urban and rural settings. Rapid urbanisation, and the increased reliance on electrical appliances in urban settings, combined with a lack of legislation regarding electrical household wiring, are among the factors that may contribute to injuries caused by burns.

The Epidemiology of Burns in Oman

In Oman, as in other parts of the world, burns have been given low priority in public health prevention policy as road traffic accidents (RTA) are considered more important cause of death and disability. This has been reflected in the Omani Ministry of Health's 5-year plan which has 30 domains including one on injuries; however, there is no mention of burns management or prevention in this domain. This is possibly due to the lack of information regarding the magnitude and severity of the problem in Oman.⁵

A recent publication in the journal *Burns* by Al-Shaqsi *et al.* could contribute to filling the information gap in this area as it describes, for the first time, the burden of severe burns in Oman. This article is of great significance, not only because of the scarcity of peer-reviewed publications from Oman in the medical literature, but also because it highlights a critical issue that is not currently on the top priority list of health issues in the country. The article illustrates the value of longitudinal institution-based data in generating evidence for public health policy.⁶ There are two main issues to

¹Department of Preventive & Social Medicine, Dunedin School of Medicine, University of Otago, Dunedin, New Zealand; ²Department of Nutrition, Ministry of Health, Muscat, Oman

*Corresponding Author e-mail: dhalasfoor@gmail.com

be learnt from such a publication: first, that burns are a hidden epidemic in Oman, and second, that local scientific research ought to be the driving force behind national policies on healthcare quality.

The article is based on a National Burns Register that was originally initiated by Thomas and Prasana in 1981, and hosted by the National Burns Unit at Khoula Hospital, Muscat, Oman. In 1986, Thomas described the first case of severe burns admitted to the National Burn Unit in Oman and recorded in this register. Subsequently, in an article published in 2000, the process of coordinating emergency care for severe burns across the whole of Oman was described. Despite the multiple data gaps from which this national register suffers, it is still an important source of longitudinal health information that helps to highlight trends and assess the determinants of burns in Oman.⁷ The register is probably the first of its kind in Oman, but unfortunately it has been neglected for years because of the lack of research interest and the necessary funding to maintain such a rich resource of health information. The register itself includes data on all patients admitted to the National Burns Unit but lacks information regarding the patients' long-term follow-up. There is a need at this stage to evaluate the accuracy and completeness of the register. While it is admirable that the register has been initiated and maintained by the efforts of individuals, it is time for healthcare policy-makers to invest in good quality healthcare databases in Oman in order to formulate robust context-specific policies. Additionally, it is important to integrate the register into a national health data bank with longitudinal health data. Data on individual patients and system performance indicators could then be gathered, analysed and utilised to inform health policies and improve the quality of care in Oman.⁸

Another interesting point highlighted by this project is that local data can be used by Omani researchers to conduct international research of a high standard with negligible costs. For years, policy-makers in Oman have turned to external researchers to conduct studies who sometimes do not understand the national context; furthermore, such studies can be very expensive. Perhaps it is time to invest in building a national research capacity, for example by encouraging and funding database formation and providing research training for clinicians. Quality healthcare is driven by evidence; the era of healthcare being steered by

clinical experience is now past.

According to the data analysed by Al-Shaqsi *et al.*, admissions rates to the National Burns Unit increased from 1994 onwards. The average annual admission rate during the study period was estimated to be 7 per 10,000 people per year.⁶ This steady increase in the admission rate could possibly be due to the increased detection and implementation of referral protocols. During the period 1995 to 2000, the number of physicians per 10,000 people increased from 11.8 to 13.6, and the number of specialists also increased from 3.7 to 4.5. This coincided with the opening of two new regional hospitals, adding an additional 626 beds to the 4,564 beds which already existed nationwide. Thus this increase may possibly have arisen from an improvement in the detection of burn cases, better management in regions away from the capital area, and thus an increased number of referrals.⁹

International research suggests that only around 5% of the total burns requiring hospitalisation are severe enough to be admitted to a tertiary-level care institution.¹⁰ Therefore, the annual incidence of burns requiring hospitalisation in Oman is estimated to be around 4,000 patients per year. This is half the number of people injured in car crashes per year in Oman; however, as mentioned earlier in this article, the issue of burns receives little attention compared to RTA.

Another finding of Al-Shaqsi *et al.* was that the majority of severe burns in Oman were in children aged between 1 and 10 years old. This is consistent with the data in the GBD project, which found that the DALYs of fire casualties among children between 1 and 4 years old accounted for only 0.8% of the total DALYs. In contrast, the contribution of fire to the years of potential life lost (YLL) was highest among the same age group, at 1.8%; this is almost twice the contribution of the next highest age group. These findings raise questions regarding childcare and the need for prevention programmes.¹¹ The comparison of the number of burns reported in the GBD project to the global estimates is noteworthy. The reported contribution of fire casualties globally is 2.4 % of YLL and 2.1% of DALYs—almost triple the estimates of Oman. It is important to conduct an in-depth study to assess the true magnitude and risk factors for burns in Oman. Children are the most affected population group, and this may be the tip of the iceberg that warrants a careful investigation

of child rights in Oman.

Furthermore, Al-Shaqsi *et al.* highlight the direct cost of severe burns in Oman. For each patient admitted to the National Burns Unit, the estimated cost was around 16,000–30,000 Omani riyals per patient.⁶ This cost does not take into account the intangible toll of the psychological and societal trauma, particularly in children, that may result from burns injuries.

Public Health Policy and Evidence

Rapid social and economic transition in the span of the past decade, the number and complexity of health problems have increased significantly, and so have the decision-making tools and methods. Generally, health authorities do not have enough resources to tackle each public health issue individually; therefore, a sound evaluation of each problem, and its relative contribution to the mortality and morbidity in a country, ought to be carried out in order to prioritise the allocation of resources. To that end, policy-makers and researchers need to employ all possible methods to improve the scientific quality and validity of medical research, and integrate available resources to reduce the financial and human resources burden on the system.¹²

The authors of the aforementioned article demonstrate a prime example of the feasibility of utilising available data for research. Starting from a manual register, a computerised database with 25 years' worth of cases was created and analysed. This is a tremendous effort, and it provides invaluable information that could not be otherwise obtained; furthermore, this data-set could subsequently be built on to monitor programme effectiveness and the trends of severe burns in Oman over time.

Longitudinal data, generated from electronic medical records (EMR), are becoming increasingly important to researchers and physicians. Quality of care and patient outcome indicators could potentially be generated from EMR; however, there are user satisfaction and data quality issues that should not be ignored. Because of the wide utility of EMR, it is important to develop these in consultation with all stakeholders.^{13,14} Such a system is currently lacking in Oman. Instituting a national data-collection initiative in different areas

of healthcare would enhance the overall quality of care provided to all of the country's residents.

Conclusion

In summary, Al-Shaqsi *et al.*'s paper is a landmark in public health in Oman. For a long time, the public health focus has been on communicable diseases and prevention strategies that include vaccinations and nutritional supplementation. It is now time to think beyond the box, and to be alert to what the data are telling us. Researchers in Oman are capable of using national data to influence national decision-making, particularly as context and evidence matter in healthcare policies. We are hopeful that articles like this will pave the way to further utilisation of EMR and institutional data in Oman to inform national health policies. Furthermore, Al-Shaqsi *et al.* showed that burns are an expensive but preventable healthcare problem in Oman—and one which disproportionately impacts our children. Issues such as the adequacy of regional burn healthcare services and long term rehabilitation facilities for burn victims are yet to be addressed in Oman. In conclusion, to tackle burns effectively and efficiently as a public health problem, it is important to establish a national programme that includes adequate surveillance and monitoring, assessment of risk factors, and public health interventions, as well as evidenced-based management guidelines.

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