Letter to the Editor

Social Autopsy is a dire need for investigating child mortality in Pakistan

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The world has been unable to meet the United Nations Millennium Development Goals (MDGs) of reducing child mortality by 2015. Since 1990, there is an established disparity of under-5 mortality rates among countries across the globe. This disparity is due to high burden of child deaths in several of the low income countries. These high burden countries includes India, Nigeria, Pakistan and Democratic Republic of the Congo (DRoC) (UNICEF-Report-2015). Currently, these four countries carry almost 45% of the global burden of child deaths. If these high burden countries continues to shows such trends of child mortality, then in the next 15 years or so, they will be carrying almost half of the global burden of child mortality (UNIGCME-2015).

Pakistan, being one of the top four high burden countries in relation to child mortality estimates (UNIGCME-2015), is the sixth most populous country of the world with a population of almost 185 million. Here, the adult literacy rate is of about 57% from 2012 estimates, which is lowest among its fellow countries on the list of top four high burden countries (except Nigeria,) ("Worldbank data ", 2016). The per capital GDP is about 1316.6 USD, which is again lowest among the fellow high burden countries (with the exception of DRoC) ("Worldbank data ", 2016). Here, government spends almost 2.6% of the GDP to the per capita on health ("Worldbank data ", 2016). Pakistan stands third on the list among its fellow high burden countries in relation to 2014 estimates of under-5 mortality rate (UNICEF-Report-2015). With a trend of under-five mortality rate (U5MR) estimates of 139/1000 in 1990 to 86/1000 in 2013, the country has only been able to reduce the U5M estimates to 38% of the 1990 estimates (the target was to achieve

66% reduction by 2015) (UNICEF-Report-2014). During the year 2013, almost 1 in 11 Pakistani children failed to reach their fifth birthday (UNICEF-Report-2014), mostly due to preventable diseases. During the same year, almost 49% of under-five deaths occurred during the first month (neonatal period) of their lives (UNICEF-Report-2014). Pakistan currently ranks fourth in the list of highest preterm births, which is the leading cause of neonatal mortality ("Pakistan Demographic Health Survey," 2012-2013; UNICEF-Report-2014).

Country lacks data on important variables which are related to child mortality. This is due to several of the reasons. Firstly, due to the fact that here, a large number of child deaths occur outside the health facilities and no medical records (including the death certificates) exist linked with such mortalities. Secondly, even the data on deaths occurred inside the health facilities misses out information on cause of death and its determinants, or if it exist, the content is always questionable on its legitimacy. Thirdly, the vital registration system is weak and there is no well-established system to capture data on death occurring outside health facilities, especially those occurring in areas quiet far from health facilities, and even in urban slums. Therefore, a large number of the child deaths are neither registered nor certified as to the cause of death (David Marsh, 1993). To overcome the issue of death registration, likewise several of the developing countries, Pakistan also has adopted verbal autopsy (VA) technique, The VA technique involves enquiring the caretakers set of questions on the signs and symptoms that occurred before the death event. It helps in registering the deaths missed out from death registration system (in those circumstances,

International Journal of Endorsing Health Science Research
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Volume 4 Issue 2, June 2016
www.aeirc-edu.com

Print: ISSN 2307-3748
Online: ISSN 2310-3841

where the death has already happened and no medical endorsement involved with it). Additionally, to that, it also helps in assigning the cause of death (more specifically, the biological cause of death). VA helps in recording the signs and symptoms that occurred during illness and before death and ultimately assigning the cause of death (after reviewing the details by specialists). The outcome measure more specifically addresses the biological cause of death (for example Pneumonia, malnutrition, diarrhea, etc).

In Pakistan, the use of VA have been on a small scale before 2003, however, afterwards, the National Programme for Family Planning and Primary Health Care has expanded their use (Sadiqua N. Jafarey, 2009). Since then, although VA has been conducted across Pakistan (Mirza, Memon, Adil, & Paryar, 2012; Sami & Baloch, 2004), and has come up as a well-structured tool to be used for recording the sign and symptoms appeared before the death incident. However, due to limited coverage of CHW and non-existence of a well-established country wide surveillance system, only scattered attempts of VA is evident in local literature.

The data obtained from VA stood out very valuable and has contributed significantly by helping the policy makers in developing key interventions for reducing CM estimates in several of the developing nations (Edmond et al., 2008; Soleman, Chandramohan, & Shibuya, 2006). Based on such data, key interventions for ensuring safe delivery and provision of quality care with sustainability have also been initiated. Several of the preventive interventions and programs (for example Kangaroo Care to the newborn, and provision of chlorhexidine kit for preventing cord infections) have also been identified to be focused here. Additionally, improving the coverage rates of immunization from 54 percent to more has also become one of the priorities of the country ("Pakistan Demographic Health Survey," 2012-2013; UNICEF-Report-2014). Polio is one of the major concerns of the world, and Pakistan is one of the unfortunate countries that are producing new cases of polio every year. Being an international emergency, Pakistan has started working on improving the coverage rate of polio vaccine for improving child survival and preventing disability, however, the issue has gone deeper roots and it need an explicit social mobilization and new interventions to overcome social barriers. All such efforts have been implemented simply because of the huge amount of data obtained on death causation, especially through VA.

A huge research and investment has been paid globally to promote the implementation of VA especially in developing countries. Although VA has given a huge amount of worthfull data and much resources and energy has been devoted in developing and employing VA technique; the traditional mortality investigation (in most of the developing countries, including Pakistan) of U5 children, uses only VA technique and factually examines the mortality event with a very limited view by only examining the biological determinants (using VA) and literally miss out most of the information on other Non-biological determinants (NBD) (all those determinants, which are not biological in nature, for example, social factors) (David Marsh, 1993; H. D. K. Peter Waiswa, Robert Jakob & Robert E Black, 2012; Sadiqua N. Jafarey, 2009)

These NBD may include wide variety of factors ranging from social, cultural, demographical, environmental, financial, factors to knowledge and behavior of parents' during the pre-illness phase (before the illness), care seeking process (throughout the illness period) and health system determinants. All these determinants have been found linked as barriers to the overall process of healthcare delivery to the ill child. These barriers also contributes to death incidents (along with BCoD identified through VA) (Källander et al., 2011).

Focusing non-biological determinants linked with death of any person are of equal importance as focusing biological causes of death (Hinderaker SG, 2003; H. D. K. Peter Waiswa, Robert Jakob & Robert E Black, 2012; Sadiqua N. Jafarey, 2009; Xing Lin Feng, 2012). Literature suggests that several researches have been conducted to identify NBD and to see their impact on child deaths; and it has been found out that these social factors have a profound impact on the survival of a child (David Marsh, 1993; Hinderaker SG, 2003; H. D. K. Peter Waiswa, Robert Jakob & Robert E Black, 2012). To understand the causes of child mortality, an in-depth understanding of these factors and proper addressing the interventions relevant to these barriers is highly recommended in the literature (Kallander et al., 2011; Koffi et al., 2016; K. K. Peter Waiswa, Stefan Peterson, Goran Tomson and George W. Pariyo, 2010; Shah et al., 2014) . Barriers within health facility (ranging from longer waiting times at health facility to lack of equipment) creates delays which was one of the commonest cause of under-five mortality in a study done by Källander (Källander et

al., 2011). Poor hygienic conditions; knowledge of health related information (e.g. danger signs of illness); social norms especially decision making process of households and differences of health seeking process among both gender; history of previous experience of healthcare seeking process etc. have also been identified as major barriers in accessing healthcare (Bedford & Sharkey, 2014). Similarly, it has been seen that the patients from rural areas are usually underserved within healthcare facilities (Ustrup Dr et al., 2014) which itself a social norm of the society that has created a disparity in access to healthcare services. Compare to BCoD, these NBD therefore are also crucially linked with child mortality. Unfortunately, all these NBD are usually not addressed (in detail) in the traditional VA enquiry of child mortality in most of the high burden developing countries.

Over the time, researchers across the globe have been debating and agreed on the need for an additional death investigative procedure, which apart from VA (that gives a biological reasoning of death), may collect precious information on any inadequacies, barriers and/or social modifiable factors around the death event (in the home, community, health facilities and the referral mechanisms), thereby assigning a 'social diagnosis of death', which could guide programming and policy pertaining to improving the child health and child survival estimates of the high burden countries .

To record such NBD, there is a specific technique known as "Social Autopsy" (SA) (Kallander et al., 2011; Kalter, Salgado, Babille, Koffi, & Black, 2011; H. D. K. Peter Waiswa, Robert Jakob & Robert E Black, 2012; Upadhyay, Krishnan, Rai, Chinnakali, & Odukoya, 2014), which is similar to VA (that records only BCoD only). Although the literature shows evidence of several segregated attempts of SA focusing the social causes of under-five deaths (Kalter et al., 2011; Peter Waiswa, Karin Kallander, Stefan Peterson, and, & Pariyo, 2010), the SA (in comparison to VA) is a newer technique and has not been widely practiced across developing countries (Kallander et al., 2011; Koffi et al., 2016; H. D. K. Peter Waiswa, Robert Jakob & Robert E Black, 2012; Waiswa, Kallander, Peterson, Tomson, & Pariyo, 2010) and more specifically in Pakistan (Anwar, Green, & Norris, 2012; Rehman, Shaikh, & Ronis, 2014). Some of the countries like India and Nigeria have been able to get a rich data from SA on child mortality, which potentially helped them to bring about a significant change in health policy for improving child survival estimates (CSE) (Koffi et al., 2016; Peter Waiswa et al., 2010; Shah et al., 2014).

Conclusion

Being one of the high U5M burden countries, having weak death reporting system, with multitude of health related challenges; Pakistan is an important country that should stringently be working on all the ways and means of reducing child mortality. The country should focus on capturing detailed data on social determinants apart from BCoD. Social Autopsy (SA) technique is not been exercised in Pakistan. The SA should be piloted in Pakistan to understand the social causes linked with child mortality. This will open the doors of local research and will help in framing interventions required on improving the child survival estimates. Efforts need to be paved down to support the need of this new technique.

Competing Interest

All the authors disclose that there are no competing interests in the preparation of this article.

Acknowledgment

References

- Anwar, M., Green, J., & Norris, P. (2012). Health-seeking behaviour in Pakistan: A narrative review of the existing literature. *Public Health, 126*(6), 507-517.
- Bedford, K. J., & Sharkey, A. B. (2014). Local barriers and solutions to improve care-seeking for childhood pneumonia, diarrhoea and malaria in Kenya, Nigeria and Niger: a qualitative study. *PLoS ONE, 9*(6), e100038.
- David Marsh, N. M., Zeba Rasmussen, Khalid Mateen, Arif Amin Khan. (1993). Cause-Specific Child Mortality In A Mountainous Community in Pakistan By Verbal Autopsy. *JPMA, 43*, 226-229.
- Edmond, K. M., Quigley, M. A., Zandoh, C., Danso, S., Hurt, C., Agyei, S. O., & Kirkwood, B. R. (2008). Diagnostic accuracy of verbal autopsies in ascertaining the causes of stillbirths and neonatal deaths in rural Ghana. *Paediatric and Perinatal Epidemiology, 22*(5), 417-429.
- Hinderaker SG, O. B., Bergsjøc PB, Gasheka P, Lied RT, Havnen J, Kvale G. (2003). Avoidable

stillbirths and neonatal deaths in rural Tanzania. *International Journal of Obstetrics and Gynaecology, 110*, 616-623.

- Kallander, K., Kadobera, D., Williams, T. N., Nielsen, R. T., Yevoo, L., Mutebi, A., . . . Waiswa, P. (2011). Social autopsy: INDEPTH Network experiences of utility, process, practices, and challenges in investigating causes and contributors to mortality. *Popul Health Metr, 9*, 44.

- Kalter, H. D., Salgado, R., Babille, M., Koffi, A. K., & Black, R. E. (2011). Social autopsy for maternal and child deaths: A comprehensive literature review to examine the concept and the development of the method. *Population Health Metrics, 9*.

- Koffi, A. K., Maina, A., Yaroh, A. G., Habi, O., Bensaid, K., & Kalter, H. D. (2016). Social determinants of child mortality in Niger: Results from the 2012 National Verbal and Social Autopsy Study. *J Glob Health, 6*(1), 010603. doi:10.7189/jogh.06.010603

- Källander, K., Kadobera, D., Williams, T. N., Nielsen, R. T., Yevoo, L., Mutebi, A., . . . Waiswa, P. (2011). Social autopsy: INDEPTH Network experiences of utility, process, practices, and challenges in investigating causes and contributors to mortality. *Population Health Metrics, 9*.

- Mirza, F. H., Memon, A. A., Adil, S. E., & Paryar, H. A. (2012). Audit of custodial deaths in Karachi--an autopsy-based study. *J Pak Med Assoc, 62*(8), 752-755.

- Pakistan Demographic Health Survey. (2012-2013).

- Peter Waiswa, Karin Kallander, Stefan Peterson, and, G. T., & Pariyo, G. W. (2010). Using the three delays model to understand why newborn babies die in eastern Uganda. *Tropical Medicine and International Health, 15*(8), 964-972.

- Peter Waiswa, H. D. K., Robert Jakob & Robert E Black. (2012). Increased use of social autopsy is needed to improve maternal, neonatal and child health programmes in low income countries. *Bulletin World Health Organization, 90*, 403-403A.

- Peter Waiswa, K. K., Stefan Peterson, Goran Tomson and George W. Pariyo. (2010). Using the three delays model to understand why newborn babies die in eastern Uganda. *Tropical Medicine and International Health, volume 15*(8), 964–972.

- Rehman, A., Shaikh, B. T., & Ronis, K. A. (2014). Health care seeking patterns and out of pocket payments for children under five years of age living in Katchi Abadis (slums), in Islamabad, Pakistan. *International journal for equity in health, 13*, 30.

- Sadiqua N. Jafarey, T. R., Marge Koblinsky, Nazo Kureshy. (2009). Verbal Autopsy of Maternal Deaths in Two Districts of Pakistan—Filling Information Gaps.

- Sami, S., & Baloch, S. N. (2004). Perinatal mortality rate in relation to gender. *J Coll Physicians Surg Pak, 14*(9), 545-548. doi:09.2004/JCPSP.545548

- Shah, R., Mullany, L. C., Darmstadt, G. L., Talukder, R. R., Rahman, S. M., Mannan, I., . . . Baqui, A. H. (2014). Determinants and pattern of care seeking for preterm newborns in a rural Bangladeshi cohort. *BMC Health Serv Res, 14*, 417. doi:10.1186/1472-6963-14-417

- Soleman, N., Chandramohan, D., & Shibuya, K. (2006). Verbal autopsy: Current practices and challenges. *Bulletin of the World Health Organization, 84*(3), 239-245.

- UNICEF-Report-2014. UNICEF-Levels and Trends in Child mortality-Report 2014.pdf. *Levels and trends in Child Mortality 2014 Report*.

- UNICEF-Report-2015. Level and Trend in Child Mortality; Report 2015.

- UNIGCME-2015. Retrieved from http://www.un.org/millenniumgoals/2015_MDG_Report/pdf/MDG%202015%20rev%20(July%201).pdf

- Upadhyay, R. P., Krishnan, A., Rai, S. K., Chinnakali, P., & Odukoya, O. (2014). Need to focus beyond the medical causes: A systematic review of the social factors affecting neonatal deaths. *Paediatric and Perinatal Epidemiology, 28*(2), 127-137.

- Ustrup Dr, M., Ngwira, B., Stockman, L. J., Deming, M., Nyasulu, P., Bowie, C., . . . Fischer, T. K. (2014). Potential barriers to healthcare in malawi for under-five children with cough and fever: A national household survey. *Journal of Health, Population and Nutrition, 32*(1), 68-78.

- Waiswa, P., Kallander, K., Peterson, S., Tomson, G., & Pariyo, G. W. (2010). Using the three delays model to understand why newborn babies die in eastern Uganda. *Trop Med Int Health, 15*(8), 964

- Worldbank data (2016).

- Xing Lin Feng, T., Evropi, Li Liu, Chan, David Hipgrave, Robert Scherpbier, Kit Yee, Sufang Guo, Wen Chunmei, Mickey Chopra, Harry Campbell, Igor Rudan, Yan Guo,. (2012). Social, economic, political and health system and program determinants of child mortality reduction in China between 1990 and 2006: A systematic analysis. *Journal of Global Health*.