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REVIEW

Syria: health in a country undergoing tragic transition

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Abstract
Objectives To document the ongoing destruction as a result of the tragic events in Syria, to understand the changing health care needs and priorities of Syrians.
Methods A directed examination of the scientific literature and reports about Syria before and during the Syrian conflict, in addition to analyzing literature devoted to the relief and rebuilding efforts in crisis situations.
Results The ongoing war has had high direct war casualty, but even higher suffering due to the destruction of health system, displacement, and the breakdown of livelihood and social fabric. Millions of Syrians either became refugees or internally displaced, and about half of the population is in urgent need for help. Access to local and international aid organizations for war-affected populations is an urgent and top priority.
Conclusions Syrians continue to endure one of the biggest human tragedies in modern times. The extent of the crisis has affected all aspects of Syrians' life. Understanding the multi-faceted transition of the Syrian population and how it reflects on their health profile can guide relief and rebuilding efforts' scope and priorities.

Keywords Syria · Conflict · Health care · Refugees

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Introduction

Syria is a low-middle income country on the Eastern shore of the Mediterranean sea and home to roughly 22 million inhabitants from diverse religious and ethnic backgrounds including Sunnies (≈75 %), Alawites, Christians, Armenians, Assyrians, Druze, Kurds, and Turkmans. Prior to the current conflict, the Syrian population was generally characterized by a young age structure (58 %, <24 years). Gross domestic product per capita (GDP) doubled between the years 2000 and 2010, yet the trend was not homogenous (e.g., 3.88 % growth in 2009 compared to 1.14 % in 2010) (UN 2014). Paradoxically, unemployment among youth has greatly increased during the same period of economic growth (48 % in 2011, a fivefold increase since 2000) (IFAD 2011; SCPR 2013). The situation with education also improved in the same period, but gender inequality in education (women illiteracy 22 %, men 10 %), employment, economic and political participation prevailed (UNDP 2011; World Bank 2012). Urban–rural inequality in economic development, education, and resources was also widespread, especially in the eastern provinces that witnessed severe consecutive droughts since 2005 pushing 2–3 million people into "extreme poverty" (IRIN 2010). Generally, despite the relative political and economic

stability of Syria during the 40 years prior to 2011, the country has suffered from chronic lack of political participation and economic opportunities, which perhaps were crucial to the breakout of 2011 uprising.

The health care system in Syria consists of a government-run public system that provides mostly primary care services, while the majority of advanced care services and facilities belonging to the private sector concentrated in major urban centers such as Damascus and Aleppo. Out-of-pocket payments for private providers and co-payments for public hospitals accounted for 60 % of health expenditures of Syrians in 2008 (Mershed et al. 2012). Attempts to liberalize the health care system and to provide more autonomy for the private sector in recent years have resulted in a widening of inequality in access-to-care and increased the financial burden of those least able to pay (Kherallah et al. 2012).

The tragic developments in Syria in recent years, and their irreversible consequences on many aspects of life of Syrians necessitate extensive documentation efforts of the changes in health-related indices and needs as a result of conflict. Many reports and documents touch upon some aspects of the current crisis and how it is affecting Syrians, yet a broad account of the health cost of the Syrian conflict benchmarked on some pre-conflict health, economic and social indicators remains lacking. We hope that this review can provide a readily informative record to help understand what this country and its population are going through and how it reflects on their well-being and health needs. While such project is rife with uncertainties for a conflict that is still closed to the international press and with no end in sight, it is a step in the efforts to provide some guiding parameters for relief and rebuilding efforts.

Methods

For a focused review on the health status of Syria, a comprehensive search was implemented to identify the relevant sources that address the socioeconomic, humanitarian, human rights and health indicators. In addition to reviewing and analyzing reports released by national, regional and international organizations, we synthesized indicators of health status of the Syrian population from peer-reviewed articles that were implemented in a very specific areas to collect pertinent population-based indictors. We also used estimates from a variety of humanitarian, relief, and intergovernmental organizations such as the UNHCR, World Bank and WHO to draw a picture about the breakdown of health services and their consequences during the current conflicts. Several models that were followed for rebuilding the health infrastructure in war-torn zones were reviewed, and appropriate recommendations tailored to the context of the Syrian population were adopted. The information obtained from the literature was synthesized mainly in three themes as follows: health profile pre-crisis, challenges resulting from the Syrian conflict, and finally challenges facing relief and rebuilding efforts.

Results

Health profile, pre-crisis

Mortality and morbidity: an overview

Between 2000 and 2010, childhood mortality rates in Syria had been steadily declining with neonatal, infant, and child mortality rates falling by nearly one-third (World Bank 2012). Adult mortality was also declining (98.5–75.3 per 1,000 population), but the pattern was less clear for men (World Bank 2012). Morbidity patterns in Syria are typical of the epidemiological transition, where the persistent burden of infectious diseases is being overtaken by that of chronic and non-communicable diseases (Fig. 1) (WHO 2011). In 2004, for example, estimates of mortality from cardiovascular disease (CVD; coronary heart disease and stroke) accounted for over half of all-cause mortality in Aleppo, the second largest city in Syria with population around 2.5 million (Maziak et al. 2007). Risk factors for CVD were also widespread among the adult population (30–45 years old) with about two out of five were hypertensive, obese, or smokers (Maziak et al. 2007). Modeling analysis based on time trends in CVD mortality in Syria showed that the overall rate of coronary heart disease morality rose by 64 % between the years 1996 and 2006, mostly due to increases in their risk factors (Rastam et al. 2012). The last two decades witnessed as well an increase in cancer morbidity and mortality in Syria perhaps due to a combination of increased risk factors and improved documentation (Deeb and Eid 2012). For example, a limited surveillance conducted in Aleppo in 2001, showed that the top three cancers (incidence rate) in men were bladder, leukemia and lung, compared to breast, uterus/cervix and leukemia in women (Mzayek et al. 2002).

Maternal and child health

Fertility rate of Syrian women witnessed an important decline between 2000 and 2010 (from 3.6 to 2.9) (World Bank 2012). This trend was accompanied by improvements in antenatal care, drop in maternal mortality ($\approx$40 % drop during 2000–2010) (UNDP 2012; Bashour et al. 2008). According to the World Bank data, 54 % of Syrian women (ages 15–49) were using any contraceptive in 2009, while

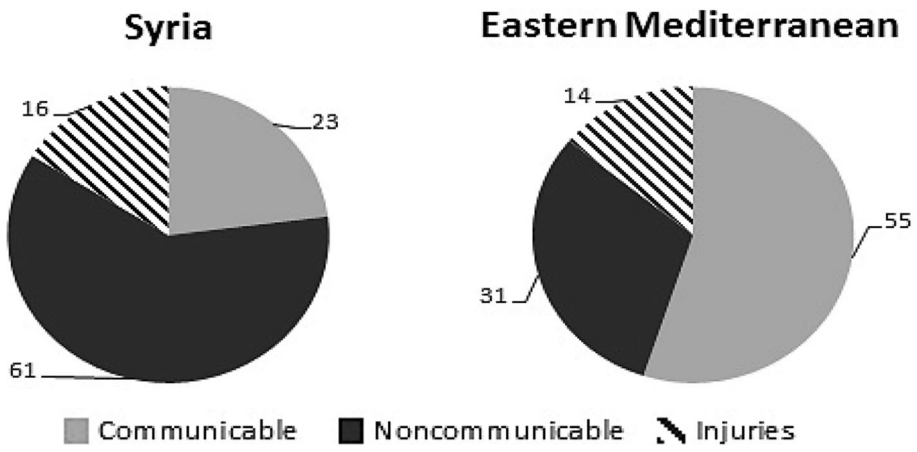

Fig. 1 Distribution of years of life lost by cause (%) in Syria with comparison to regional (Eastern Mediterranean) estimates, 2008 (WHO 2011)

about 25 % of births were unplanned (World Bank 2009; Rashad and Zaky 2013). Among married women, intrauterine devices were the most commonly used contraceptive method (25.7 %), followed by pills (12.9 %) and periodic abstinence (9.2 %) (PRB 2008). Adverse health outcomes were common among children under 5, where on average two out of five Syrian children suffered from anemia and 10–30 % were malnourished (UNDP 2012). This has coexisted with high levels of childhood overweight and obesity reaching about one-fifth of Syrian children, a characteristic of the epidemiological transition (UNDP 2012). In 2010, only one-third of Syrian children received vitamin A supplementation, and treatments for diarrhea ranged from one-third for oral rehydration to one-half for the use of oral rehydration salt packets. Immunization coverage for DPT and measles among children 12–23 months of age were approximately 80 % (UNDP 2012).

Health care resources

In 2010, Syria had 1.5 hospital beds and physicians available per 1,000 population, while the number of nurses and midwives was slightly greater at 1.9 (UNDP 2012). Few mental health resources were available nationally (0.5 psychiatrists/psychiatric nurses per 100,000), in contrast to the high need for mental health support, especially for women who suffer disproportionate burden of mental distress (Maziak et al. 2002; Asfar et al. 2007). Government expenditure on health as a percentage of GDP has decreased by nearly 30 % between 2000 and 2010 (from 4.9 to 3.4 %). In 2011, for example, the public sector provided 49 % of the total expenditure on health, and the remaining was paid by individuals, charitable NGOs, private health insurance, and payments by private corporations, while external aid accounted for only 0.7 % of health care expenditures in 2010 (WHO 2011). Table 1 highlights the main health and socio-demographic indicators of pre-conflict Syria.

Table 1 Main socio-demographic and health indicators of Syria pre-conflict

Indicator	Year	Estimate
Total population (millions)	2011	21.804
Life expectancy at birth (years)	2011	73/77 (m/f)
Crude birth rate (per 1,000 population)	2011	24.7
Crude death rate (per 1,000 population)	2011	3.8
Population living in urban areas	2011	56 %
Access to clean water, % population (urban)	2010	93
Access to clean water, % population (rural)	2010	86
Gross national income/capita (US$ PPP international)	2011	3,029.0
Percentage adult (≥15 years) literacy rate	2010	83.4
Labor force, adult females (%)	2011	13.1
Labor force, adult males (%)	2011	71.6
Female contraceptive use (%)	2011	58
Per capita expenditure on health (US$)	2011	49.5
Maternal mortality rate (per 100,000 live births)	2010	52
Infant mortality rate (per 1,000 live births)	2011	15.62
Percentage of newborns protected against tetanus	2011	94
Percentage of infants received BCG vaccination	2011	90
Percentage of children vaccinated against polio	2011	75

Source: WHO (2013a, 2014), Save the Children (2014a), UN (2014)

Challenges resulting from the Syrian conflict

War is often measured numerically, yet war's most formidable consequences come in broken families, communities, livelihood, and most importantly hope. Yet, based on available data of casualties and destruction resulting from the Syrian conflict, one can perhaps develop a sense of the depth and extent of the damage this conflict has brought to the very fabric of Syria as a country and Syrians as a nation (see for example Figs. 2, 3). Documentation of such destruction is beyond any one scientific report, so we will limit our presentation here to

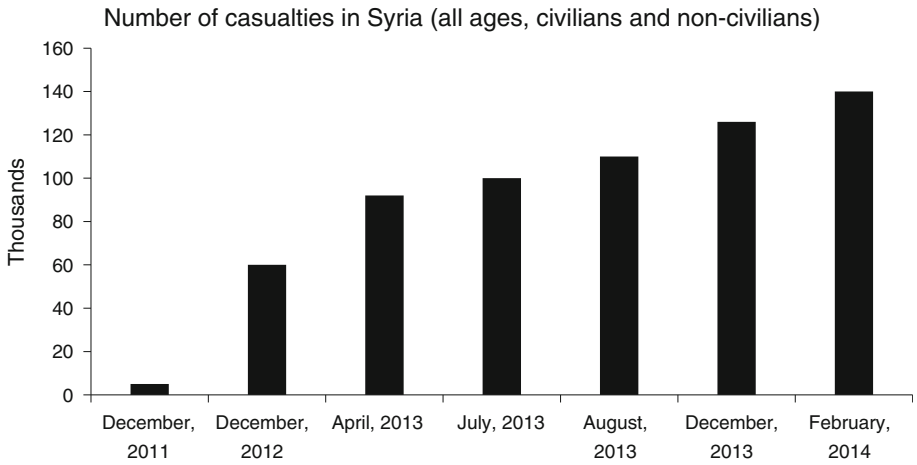

Fig. 2 Estimates of the number of deaths as a result of the current conflict in Syria (sources: CSIS 2013; Reuters 2014; Solomon 2013)

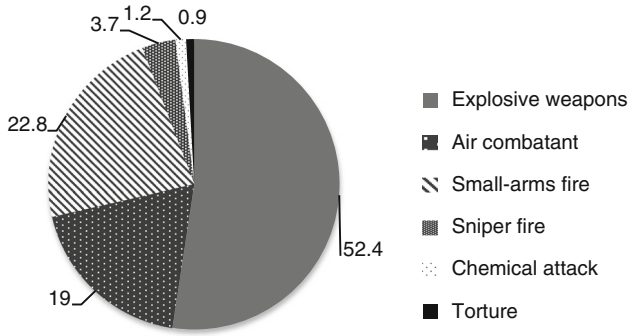

Fig. 3 Main causes of conflict-related deaths among Syrian children (%) (source: Salama and Dardagan 2013)

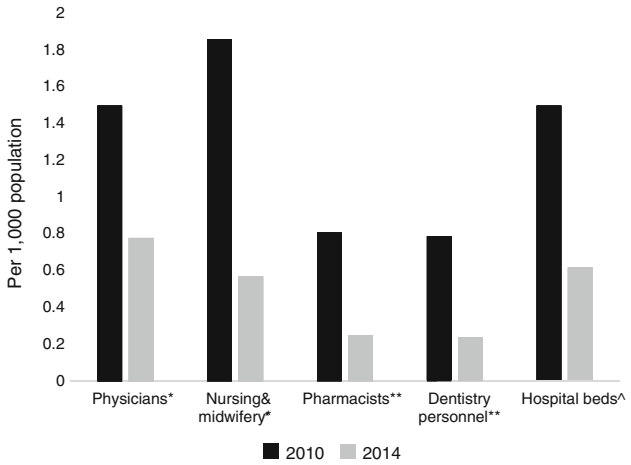

Fig. 4 Health personnel and hospital beds per 1,000 population before (2010) and during (2014) the Syrian conflict (sources: UNDP 2012*,^; Relief Web 2013**; SAMS, 2014*; Save the Children 2014a^)

some of the main health-related results of the ongoing war.

Access to health care

Access to health care is currently limited for a large proportion of Syrians due to the wide destruction of health care facilities, shortage in health care personnel, and the lack of secure routes and transportation (Coutts et al. 2013) (Fig. 4). As of the end of 2013, about 60 % of public hospitals, 38 % of primary health care centers, and 78 % of the Syria's existing ambulances have been destroyed or seriously damaged (WHO 2013b; Save the Children 2014a). A recent report of the Joint Rapid Assessment of Northern Syria (JRAN 2013) indicated that around 13 million people in the northern parts of Syria are deprived access to basic health services, food, water, and shelter. In the same region, all primary health care services intended for maternal and child health are disrupted, and more than 50 % of people with chronic disease are having difficulty in getting their medicines (JRAN 2013).

Another aspect of the current health care crisis of Syrians lies in the shortage in medicines. Prior to the conflict, Syria produced 90 % of its pharmaceutical needs, but with most of pharmaceutical industry located in conflict-hot zones in Aleppo, Homs and rural Damascus, this capacity declined to only 10 % of market needs (Pitts-Tucker 2012). The result is a critical shortage of life-saving medications, vaccines, insulin, antibiotics, chemotherapy, and even basic emergency supplies like oxygen tanks. The deterioration of medical equipment due to a lack of maintenance, parts, and new replacements is adding to an already severe shortage of health care resources available to Syrians (WHO 2013c).

The targeting of health care

The deterioration of health care is not only a consequence of the conflict, but in many instances a result of systematic targeting of hospitals, patients and medical staff. In numerous locations such as Homs, Latakia, Aleppo and

Ghouta, patients were reluctant to go to hospitals out of fear of targeted airstrikes or militia attacks, which has become a hallmark of this crisis (Lacopino 2014; Amnesty International 2011a). Human rights organizations report that the Syrian government forces had consistently been operating in states-run hospitals in search of rebel casualties or associates, and had ordered medical personnel to report patients to the authorities or else face retaliation. (Physicians for Human Rights 2011; Amnesty International 2011b; Dewachi et al. 2014). Credible estimates suggest that at least 398 medical personnel have been killed since the beginning of the conflict, of which 149 were doctors, 82 were nurses, 80 were medics, and 40 were pharmacists (Physicians for Human Rights 2014).

As the crisis continues unabated, the Syrian health care workforce is gradually bleeding out of the country. In September 2013, it was estimated that up to 70 % of the work force have already left the country, and out of the 6,000 physicians practicing in Aleppo before the war, only 250 remained (Fig. 4) (Relief Web 2013; Physicians for Human Rights 2014). Other health care resources suffered as well; 92 % of ambulances had been damaged, and 70 % percent of health centers in Aleppo, Deir Al Zour, and Idlib governorates were either damaged or out of service (Physicians for Human Rights 2014). The relentless targeting of cities such as Aleppo has overwhelmed the remaining health staff's ability to respond. Over 2 weeks in December, 2013, four of the field hospitals in Aleppo provided care to a total of 2,364 patients, mostly wounded civilians, with 386 resulting fatalities; many could have easily been prevented with proper emergency care (Attar 2014).

Current re-emergence of polio and infectious diseases

The Middle East has been mostly free of polio since the 1990s as a consequence of regional efforts at mass vaccination (Aylward 2013). In Syria, the triad of ongoing violence, malfunctioning health care system and the reduction in vaccination coverage provided the ripe conditions for the re-emergence of this scourge. Across the country, vaccination coverage for polio went down from 80 % in 2010 to 60 % in 2012, and as low as 50 % in Deir Al Zour (Sahloul et al. 2014). As of April 2014, there were 26 laboratory-confirmed cases reported by the Syrian Government (Global Polio Eradication Initiative 2014), mostly in Deir Al Zour province (15 cases), but also in rural Damascus and Aleppo, demonstrating the widespread circulation of the virus (WHO 2013d). Given the regular mass population movements within Syria and across the borders, the risk of spread of poliovirus is high.

Less publicized than polio, other communicable diseases such as measles, hepatitis A, leishmaniasis and typhoid have been on the rise as well (Coutts and Fouad 2014). In 2012, a collaborative effort between the WHO and the Syrian Ministry of Health established the Early Warning Alert and Response System (EWARS) to detect and respond to outbreak threats (Muhjazi et al. 2013). In the first quarter of 2013, for example, EWARS detected about threefold increase in acute diarrheal and hepatitis A cases (WHO 2013e). The number of confirmed cases of measles jumped from zero cases in 2010 to 139 cases in 2013, 70 % of which were proven to be not vaccinated (WHO 2013e).

Food crisis and malnutrition

The declining economic and agricultural activities, harsh winter, and siege around large civilian areas are creating the conditions for widespread famine and malnutrition. This protracted and severe shortage of food has resulted in over 10 million Syrians in need of emergency food supplies (Uenuma 2013). According to the World Food Program (WFP), more than three million people living inside Syria have been receiving food aid (WFP 2014), many of whom were internally displaced. The increase in demand for food resulting from war and displacement is compounded by the war's effect on the agricultural sector. In 2011, over a third of the Syrian population were dependent on farming as their main source of income, most of whom have become poor as a result of loss of livelihood (FAO/WFP 2013).

Some reports suggest that 1 out of 5 Syrian families are deprived of food for at least a week every month (FAO/WFP 2013), and that food insecurity is affecting all Syrians. Around four million Syrians including over 2 million children are unable to produce or buy enough food, and about 5 % are already suffering from severe malnutrition (Save the Children 2014b). Unless there will be a dramatic change in the relief efforts or political standoff, malnutrition might be the "coming epidemic" in Syria (Ahmad 2013; Uenuma 2013). In fact, malnutrition has been confirmed in most areas witnessing active fighting such as Homs, Aleppo, Rural Damascus, Quneitra, Deir Al Zour, rural Deraa and Idlib (Nebehay 2013).

The plight of refugees and displaced

More than 2.6 million Syrians have fled the country since the beginning of the conflict in March 2011, making this one of the largest mass displacement in recent history. It is estimated that the total Syrian refugee population could easily reach 4 million by the end of 2014 (UNHCR 2014). The vast majority of Syrian refugees are located in Lebanon, Jordan, Iraq, Turkey and Egypt (Fig. 5) (UNHCR 2014). The influx of Syrian refugees to neighboring countries has stretched to the limit their health care resources. Lebanon currently has the largest number of

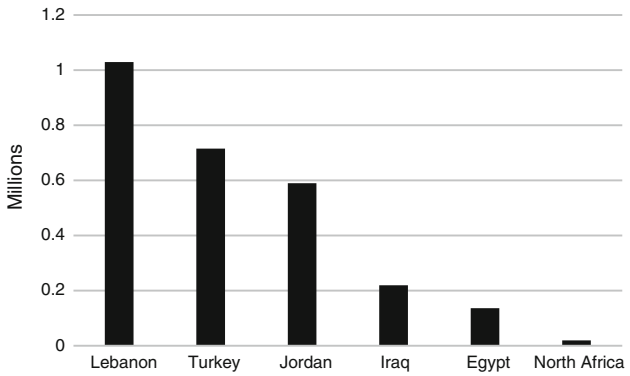

Fig. 5 The number and distribution of Syrian refugees as of April 2014 (source: UNHCR 2014)

Syrian refugees (>900,000, Feb 2014) (UNHCR 2014), 52 % of whom are women, who are at high risk of poor reproductive health and violence which is common in conflict and refugee settings (Masterson et al. 2014).

Unlike Lebanon, many of the Syrian refugees in Jordan and Turkey are living in refugee camps, where they receive to variable extent health care services provided by the host countries and international aid organizations (Döner et al. 2013; Murshidi et al. 2013). The health needs for the larger part of refugees who do not reside in camps cannot be completely estimated, but expected to be considerable (Murshidi et al. 2013). Reports from Al Za'atari camp indicate that many refugees' pre-existing conditions as well as conflict-related mental health problems are being neglected, a product of more emergency-oriented focus on acute injuries and communicable disease (Hurley 2013). After 3 years of conflict, the Syrian refugees' problem is still escalating with no solution in sight, or plans for their long-term settlement and rehabilitation in host societies.

Forced displacement is not only driving Syrians across the borders, but as of January, 2014, over 6.8 million Syrians were internally displaced (IDPs) (UNHCR 2014). This internal mass movement had imposed considerable economic and health burdens on IDPs and their hosting communities, which flared hostile and xenophobic attitudes towards them (Johnson 2013). Sadly for many of IDPs the journey never ends, as they have to relocate continuously in search of security and in most cases just a roof over their head.

The burden of chronic diseases and disability

While the focus of efforts has been on acute injuries and outbreaks, a greater burden perhaps of chronic diseases was silently affecting Syrians. This is mainly due to a decline in regular care, medicinal supplies, inadequate nutrition or physical activity, increased stress levels, and the expected sharp rise in mental and psychological conditions related to the conflict (Coutts and Fouad 2014). By the end of 2012, 70,000 cancer and 5,000 dialysis patients in Syria were not receiving necessary treatment (Cherif 2013). Such cases mean that many people with chronic diseases are being given a death sentence due to lack of care, yet those do not appear on any war-related statistics. A recent report by Save the Children estimated that 200,000 Syrians died due to chronic diseases as a result of severe shortage of medicines and health services (Save the Children 2014a). Even before the crisis, modeling projections of common chronic diseases in the Syrian society, such as Type II diabetes, were predicting a sharp increase in the coming decade (Al Ali et al. 2013). Such trends will likely be compounded by the expected shift in the age structure of Syrian society towards older ages because of disproportionate influence of the crisis on youth mortality and immigration. Relief and post-conflict efforts should focus on the urgent need to address the "silent" burden of chronic disease (Coutts and Fouad 2014).

Many of the Syrian refugees and displaced populations suffer from chronic disease and disability on top of their needs for shelter, food, and life essentials as refugees. This creates complex humanitarian situations in places where limited assistance will be available at best. A new study conducted among Syrian refugees in Lebanon and Jordan shows that 30 % of refugees have specific needs (physical or mental impairment, chronic disease, and injuries), while a staggering 77 % of older refugees (60+) have specific health needs. In such high stress situations even the fully healthy struggle to stay well. Special need refugees were twice as likely to report signs of mental distress, including 65 % of the older refugees (HelpAge International and Handicap International 2014) (Fig. 6).

Discussion

Challenges facing relief and rebuilding efforts

The provided summary documentation of the health profile of Syrians pre-conflict, and the undergoing suffering and destruction as a result of more than 3 years of conflict can help understand the health needs of Syrians and guide relief and rebuilding efforts. But even planning of help becomes a formidable task for an ongoing conflict with no end or solution in sight, as this renders most of the benchmarks, usually consulted in the planning of aid and services, moving targets. For example, the continuing disproportionate effect of conflict on young men, and the exodus of many youth with education and skills are likely to leave a sizable impact on the demographic, economic, and health profile of the Syrian population for decades to come. The deepening entanglement of the Syrian conflict in regional,

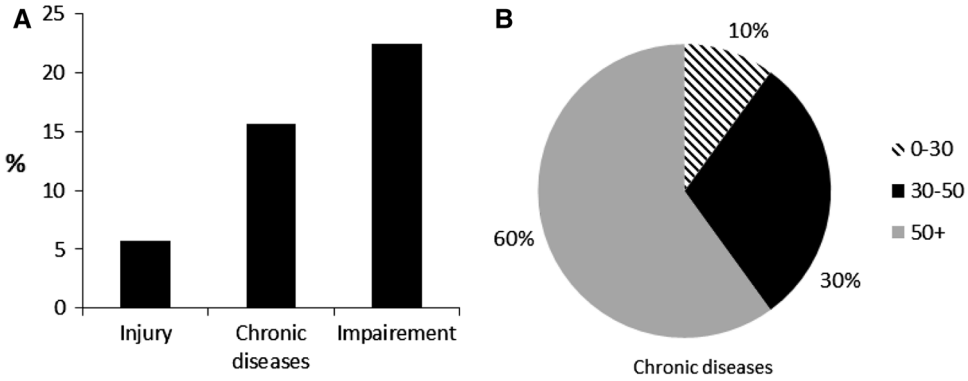

Fig. 6 **a** Proportion of Syrian refugees in Lebanon and Jordan with specific needs. **b** Chronic diseases among refugees by age group (adapted from: HelpAge International and Handicap International 2014)

geopolitical and ethnic muddle, moreover, imply that understanding how these broader factors reflect on the local context can be vital for the success of relief and rebuilding efforts. For example, because of the ethnic and political stakes of neighboring countries such as Lebanon, Iraq, and Egypt in the Syrian conflict, Syrians fleeing to those countries are often caught up in a growing wave of xenophobic rhetoric (The Nation 2013). During 2013, moreover, Shiite–Sunni hostilities have flared up in Iraq and Lebanon, mainly due to these countries' open involvement in the Syrian conflict (Abdo 2013). Such escalation further complicates relief efforts heavily dependent on the cooperation and public support in these countries. Obviously, the Syrian crisis had exposed the inadequacy of classical approaches to examining the public health impact of war by focusing on the geopolitics of conflict and its immediate effects in terms of numbers of those killed, injured, and infrastructural damage (Rosen 2013). The complexity and multidimensionality of this conflict suggests that these approaches need to be adapted and contextualized. Such factors do not usually appear in war-related statistics, or models of health care reconstruction but can be vital to the success of these efforts.

The success of aid and post-conflict health care recovery, therefore, will much depend on continuing the assessment of health needs and infrastructure, as on assessment and understanding of local context within its broader connections. Trying to involve people from the affected areas at all levels of planning, delivery and evaluation can be critical to the success of relief and rebuilding efforts (Vaux and Visman 2005). Such assessments need to involve as well the needs and concerns of refugees in neighboring countries, even after the end of hostilities, as there will likely be a protracted period of in-and-out of country movement of refugees before final resettlement. Special efforts need to be devoted to facilitate the return of health professionals and skilled personnel, as this will be critical to jump-start services and revive emerging communities (IRIN 2008). Ideally, health-directed interventions in the post-conflict environment will likely be most effective within a comprehensive package of resettlement and economic rehabilitation. This is particularly challenging given that the conflict aid environment is usually characterized by dispersed, uncoordinated, and often donor-directed priorities and agendas.

On the other hand, it is hard to imagine that such a protracted and complex conflict would have a clear end, therefore waiting for a cease in hostilities to plan relief and recovery may leave millions stranded without help. Most likely, the Syrian conflict will morph into a period of proliferation of ethnic and religious tensions, increased civilian casualties, breakdown of state authority with residual pockets of instability, and heavy involvement of regional and international powers (Estrin and Shapiro 2014). Planning for relief and health care reconstruction should, therefore, be based on a flexible platform that allows multiple routes, in structure and goals, as well as change in strategies in response to changes on the ground. One good model in such context is the mobile health care units that perform family-centered health delivery, information collection and health monitoring functions (Morikawa et al. 2011; IOM 2010).

Given the extent of ongoing destruction in Syria, acute relief and buildup of public health system post-conflict will have to start in many places with the basics: clean water, sanitation, electricity, and a roof over the head (Table 2). Population-based prevention measures, moreover, such as vaccination and nutritional support for children, will likely be of paramount importance in the acute post-conflict phase, and can benefit those most vulnerable such as children (Human Security Centre 2005). Free access of local and international aid organizations to besieged and war-affected populations is an urgent and top priority and should not wait for a political settlement of the conflict. Other health services that are, and will continue to be, in high demand include trauma, reconstructive-plastic and prosthetic services, mental health services, maternal and reproductive health, and rehabilitation services (WHO 2013e). These will need to be provisioned within a broader framework of social services to deal with broken families,

Table 2 A model for the priorities and roles of relief and health system rebuilding in Syria (adapted from: Kruk et al. 2010)

Basic needs	Health care priority	Short-term output	Long-term outcomes
Water Sanitation Electricity Housing/ shelters	Mass immunization, nutritional support, essential medications, trauma/reconstructive/plastic/prosthetic services; mental health services, maternal and reproductive health, rehabilitation services Rehabilitation of primary care services Re-establishment of health workforce Transition from relief mode to operational health care mode (secondary and tertiary care, development to f data collection and recording systems) Equitable allocation of services (urban, rural)	Improved access to quality, reliable health services for priority health problems Enhanced social solidarity and cohesion Greater confidence in government and support for social contract Stronger government capacity to administer public programs	Reduced mortality/morbidity More capable, resilient state Reduced risk of conflict recurrence

orphan children, and community cohesion and solidarity (De Vries and Klazinga 2006; Murthy and Lakshminarayana 2006). Providing essential medicines to treat major chronic diseases such as diabetes, cardiovascular disease, and cancer needs to be prioritized as well (Kruk et al. 2010). This is particularly important, given the expected change in the age structure of the society towards older ages, and that chronic disease rarely get prioritized in conflict settings (HelpAge International and Handicap International 2014).

A critical role in supporting the relief efforts and rebuilding of health care post-conflict can be played by the large and resourceful Syrian expatriate community with expertise in health care. Volunteering for service rounds, training of local capacity, and guiding local physicians and health care providers in their day-to-day practice using communication technologies can prove invaluable in aiding the building of health care infrastructure. Such involvement will likely to influence many physicians and health workers' decision to return home and serve their torn-apart country and people. What is encouraging is that the seeds of such important work are currently in place through the ongoing inspirational work done by Syrian expatriate groups such as the US-based Syrian American Medical Association and UK-based Hand-in-Hand for Syria (SAMS 2014; Hand in Hand for Syria 2014).

Conclusions

Syrians continue to endure one of the biggest human tragedies of modern times. The breadth and depth of the Syrian crisis left no aspect of lives in Syria and no Syrian family or person unaffected. The health needs of Syrians have greatly increased due to the ongoing violence, but perhaps more so due to the lack of access to health care, and breakdown of basic sanitation and public health infrastructure. Free access of local and international aid organizations to besieged and war-affected populations is an urgent and top priority and should not wait for a political settlement of the conflict. Understanding the multi-faceted transition of the Syrian population and how it reflects on their health profile and needs can guide relief and rebuilding efforts' priorities, scope, and context.

Conflict of interest All authors declare no conflict of interests.

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