

Women's anxieties relating to documentation, registration, time, and place of childbirth in Kufr 'Aqab, East Jerusalem: a qualitative study

Doaa Hammoudeh, Layaly Hamayel, Rita Giacaman

Abstract

Background Since 1967, about 14 000 Palestinians have had their Jerusalem residency revoked, and thousands struggle to maintain Jerusalem residency. Although physically located outside the Separation Wall, the Kufr 'Aqab neighbourhood is inside Israeli-defined greater Jerusalem, thereby providing legal basis for holders of Jerusalem identity cards to maintain their Jerusalem residency status. It also provides Jerusalem identity card holders who are married to West Bank identity card holders with a place to live with family members who otherwise cannot access or reside in Jerusalem without a permit (required to cross checkpoints to reach Jerusalem). In this paper, we focus on a specific vulnerability during childbearing through exploring select case studies of women's narratives as they relate to childbirth-related anxiety and dilemmas before and after Jerusalem residency registration.

Methods We conducted in-depth semi-structured interviews with 27 women residing in Kufr 'Aqab, carrying Jerusalem or West Bank IDs (age range 24–44 years). Participants were recruited through snowballing. Interviews were transcribed verbatim in Arabic and analysed thematically through repeated reading, whereby patterns, themes, and sub-themes gradually appeared. Key sub-themes related to childbearing were extrapolated. Participants provided oral informed consent.

Findings Women's narratives pointed to strong anxiety related to their need to give birth within Jerusalem boundaries, and specifically inside the Separation Wall, to facilitate the birth registration process for Jerusalem residency. Cases of psychological distress related to fears of checkpoint delays and of an ensuing birth at a checkpoint, and a perceived link between political violence and negative health outcomes, including miscarriages, were discussed. Although many women reported compromised familial support systems during childbirth, including their husband's presence during birth, women also negotiated these restrictions and where possible, used childbirth interventions to bypass occupation-imposed obstacles.

Interpretation During pregnancy and childbirth, women residing in Kufr 'Aqab face specific challenges and make unique political decisions related to giving birth in Jerusalem, attesting to a particular vulnerability that could affect the wellbeing of the mother and child. Moreover, this study highlights women's fears of severe consequences of the absence of registration for children.

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Contributors

All authors contributed to the conceptualisation, analysis, and interpretation of this study. DH and LH collected the data.

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The effect of prenatal maternal nutrition and eating habits on low birthweight in the Gaza Strip: a case-control study

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Abstract

Background Poor prenatal nutrition is recognised as an important cause of low birthweight, defined as a weight of less than 2.5 kg at birth. We aimed to assess the association between prenatal maternal nutrition and delivery of infants with low birthweight in the Gaza Strip.

Methods 446 women were selected in a ratio of 1:1 during May–June and July–August, 2007, from attendants of Al-Tahrir Hospital and Shifa Medical Centre, respectively. Cases were all women who delivered live singleton infants with a weight of less than 2.5 kg. Matched controls were mothers who delivered single live newborns weighing 2.5 kg or more during the first 24 h after their respective cases were identified. We computed univariately unadjusted matched odds ratios (mOR) and 95% CIs with conditional logistic regression. Univariate and multivariate logistic regression were used with analyses completed in two integrated steps. In model 1, we analysed prenatal predictors that remained after stepwise backward selection at univariate p value <0.20 . In model 2, we analysed the significant variables from model 1 and other principal confounding factors (parents' education, occupation, and residence by districts' distribution), stress, income, consanguinity, and body-mass index). Maternal nutritional status and eating habits were assessed subjectively by asking mothers about their appetite during pregnancy, number of meals, time space between meal ingestion and caffeine intake (tea and coffee), quality of the ingested food, and tea and coffee consumption.

Findings The findings showed independently adjusted significant linear trend for increased odds of low birthweight with poor (mOR 3.80, 95% CI 1.65–8.74) and moderate (2.28, 1.20–4.33) maternal appetite status, and diminished frequency of eating meat during pregnancy (women who ate meat fewer than three times a month and once a week had, respectively, 4.25 times [95% CI 1.70–10.6] and 2.77 times [1.42–5.38] higher risk of low birthweight compared with who consumed meat two or more times a week). Likewise, short time (<1 h) between maternal meal ingestion and tea consumption (mOR 2.48, 95% CI 1.14–5.41), and high intake of coffee (≥ 2 cups a day; 2.48, 1.14–5.41) were independently associated with increased likelihood of low birthweight after adjustment for principal confounders.

Interpretation Our results suggest that several maternal nutritional factors are associated with low birthweight in the Gaza Strip. Such associations might have implications for clinical antenatal work, especially since the identified exposures are modifiable. Emphasis should be given to educational health strategies combined with concrete developmental policies aiming to improve the socioeconomic conditions that determine the presence of diverse health-damaging exposures.

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Contributors

AA did data collection, designed the study, directed its implementation, and wrote the Abstract. IEA and KS provided conceptual advice and edited the abstract.

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Alcohol versus dry umbilical cord care among newborn infants in occupied Palestinian territory: a controlled trial

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Abstract

Background Omphalitis is considered a leading cause of sepsis among newborn infants and topical antiseptic cord care is usually recommended. In 2003, WHO recommended the use of dry cord care in settings where the risk of omphalitis and sepsis is low. In Palestine, recommendations on umbilical cord care are not clear; the 70% alcohol cord care method is still used as standard by many and the chlorhexidene method is virtually unknown. In this study we compared the alcohol and dry cord care methods among healthy newborns in two urban hospitals in the occupied Palestine territory.

Methods A non-randomised controlled trial was conducted in the newborn nurseries of two tertiary hospitals in East Jerusalem and Hebron. Newborn infants born at 37 or more weeks' gestation between March and October, 2014, were enrolled. Infants with major congenital anomalies who were admitted to neonatal intensive care unit, required antibiotics at birth, or had a hospital stay of more than 72 h, were excluded. One group of parents was asked to clean the infant's stump with 70% alcohol, and the other group to use dry cord care, changing methods on a weekly basis. The study was approved by the ethics committees of both hospitals. Written consent was obtained from participating parents.

Findings 692 newborn babies were enrolled to both treatment groups. 344 used dry cord care and 348 the alcohol cord care method. No infants developed cord infection. The mean time to separation of the umbilical cord was 7.03 days (SD 2.47) in the dry cord care group and 8.13 days (2.47) in the alcohol cord care group ($p < 0.001$).

Interpretation Our findings suggest that dry cord care is safe, is associated with a reduced separation time, and can be recommended for use in our context. Neither method of cord care was associated with the development of omphalitis in any of the study participants. A limitation of our study was that randomisation was impossible in view of the work overload and limited human resources at our hospitals.

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Contributors

HK and MS designed the study and wrote the Abstract. MAA, NAS, MM, HR, MSE, TJ, SS, AL, EJ, WK, SN did data collection and analysis.

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Fatalities and injuries in the 2014 Gaza conflict: a descriptive study

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Abstract

Background Deaths and injuries during conflict are a growing public health problem that requires urgent attention. We aimed to describe mortality and injuries among Palestinians in Gaza Strip and to assess effects on health system performance during the 2014 war.

Methods The study was based on analysis of data available in the Health Information Centre in Gaza, after ethical and administrative permissions had been obtained. Data covered all of the Gaza Strip population. We calculated numbers of injuries and deaths per 100 000 population, case fatality for conflict-related injuries, and Dirty War Index (DWI: a public health tool that systematically identifies rates of particularly undesirable or prohibited war outcomes—so-called dirty war outcomes).

Findings During the 51 days of war, 11 228 injuries (6487 per 100 000) and 2147 deaths (1241 per 100 000) were reported. Overall case fatality was 19·1%; the highest case fatality was reported in Rafah (39·1%), and case fatality in El Najjar hospital was 45·4%. The DWI highlighted the suffering of children, women, and older people. The DWI was 46·2% for mortality and 56·5% for injuries. Dirty war outcomes were not limited to killed and injured people but extended to health institutions, ambulances, and health staff. Local community hospitals succeeded in admission of more than 95% of injured people in each governorate. Cases referred to the major hospital (Shifa) in Gaza Strip were mainly from Gaza city (83%).

Interpretation Our findings indicate the presence of dirty war outcomes, as defined by the DWI, in the 2014 conflict and highlight the strains placed on the health system in Gaza, which has been severely affected by the frequent attacks. Community hospitals and the non-governmental sector have to be supported to enable them to face emergencies.

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Contributors

Both authors contributed equally. SAH completed the literature review and data organisation. YA completed statistical analysis and wrote the report.

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Effect of the 2014 attack on Gaza on the use of medical services in Al-Nasser Paediatric Hospital: a comparative study

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Abstract

Background During the 51-day attack on Gaza in 2014, approximately 2145 people were killed, of whom 20% were children. This study was done to evaluate the use of medical services in Al-Nasser Paediatric Hospital during the attack.

Methods We retrospectively compared the number and pattern of admissions to Al-Nasser Paediatric Hospital, the largest paediatric hospital in Gaza Strip, during the period of attacks in July to August, 2014, with those during July to August in 2013. Data were obtained from the patients' medical records.

Findings 3018 patients were admitted during the 2014 attacks and 1706 during the corresponding period in 2013. There were no significant differences in sex (male: 60·6% in 2014 vs 59·4% in 2013) and geographical distribution (children from Gaza: 75·6% in 2014 vs 78·1% in 2013; North-governorate: 17·8% vs 18·8%) of the patients between the two periods. Moreover, there were no significant differences in the distribution of different disease categories, except for that of meningitis (43·2% in 2014 vs 21·9% in 2013; odds ratio [OR] 2·7, 95% CI 2·2–3·3). Number of emergency room visits (20100 patients in 2014 and 20400 in 2013) and hospital mortality rate (1·2% in 2014 and 1·3% in 2013) were similar in the two periods. Bed occupancy rate nearly doubled during the attack period (180% vs 95%; OR 1·9, 95% CI 1·3–2·7). The median hospital stay was significantly shortened during the attack period (2 [IQR 1–3] days vs 3 [1–6] days; difference in means 0·67, 95% CI 0·65–0·68).

Interpretation The admission rate during the attack period was increased, without a significant increase in emergency room visits. This finding could be due to the closure of other health-care facilities (because of damage or insecurity), but also might be attributable to changes in health-care seeking behaviour during the attack period because only patients who are severely ill take the risk to come to the emergency department; this behaviour could be reflected by the increase in meningitis-related admissions during the attacks. Despite the increase in admission and bed-occupancy rate during the attack period, hospital mortality rates were similar in both periods. Required resources (including human workforce) should be prepared in advance to accommodate the increase in admission rate during emergency state.

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Contributors

NA, MA, and YA devised the study. SA and NA collected the data, LA analysed the data, and NA, LA, and YA interpreted the data. NA drafted the abstract.

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Lung function and respiratory symptoms among female hairdressers in Palestine: a 5-year prospective study

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Abstract

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Background Hairdressers are at risk of respiratory health problems due to exposure to chemicals in the workplace. We aimed to examine possible changes in self-reported respiratory symptoms and lung function over 5 years. Also, we examined the associations between occupational factors and lung function changes between baseline and follow-up.

Methods A cohort of 170 female hairdressers in Hebron answered a questionnaire and did a lung function test in 2008. A follow-up study was conducted on the same cohort in 2013. Changes in respiratory symptoms and lung function over the period were measured using generalised and linear mixed models. The lung function test was done using a PC spirometer and a disposable mouthpiece filter and nose clip. Participants were given instructions on the forced maximal expiratory manoeuvres. Respiratory symptoms that were assessed with the questionnaire included chest tightness, shortness of breath, wheezing, cough, and phlegm during the past 12 months. Furthermore, we asked questions on doctor-diagnosed asthma. Differences between current and former hairdressers in respiratory symptoms and lung function at follow-up were measured using mixed models. Written informed consent was obtained from all participants.

Findings 161 individuals participated in the follow-up study. 28 (16%) of the participants had left their profession. Current hairdressers reported significantly greater changes in chest tightness (prevalence difference [PD] 0·037, 95% CI 0·005 to 0·069) and shortness of breath (0·038, 0·001 to 0·076) between baseline and 2013, compared with former hairdressers. Former hairdressers reported fewer symptoms at follow-up than did current hairdressers (PD 0·071, 95% CI -0·0167 to 0·024 for wheezing; 0·071, CI -0·167 to 0·023 for shortness of breath). At follow-up current hairdressers showed a significant decrease in forced expiratory volume in 1 s (FEV₁) of 31 mL per year (95% CI 25 to 36). Hairdressers who had been working for 4 years or longer at baseline showed a stronger annual mean decline in FEV₁ than those who had worked for less than 4 years (difference 13 mL, 95% CI 1 to 25).

Interpretation Current hairdressers developed more respiratory symptoms and had a larger lung function decline than former hairdressers. Working for more years was associated with increased lung function decline. These findings suggest that workplace-related factors, including chemical exposures, might have a negative effect on the respiratory health of hairdressers. Thus, there might be a need to monitor exposures and eventually improve the workplace conditions.

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Contributors

All authors contributed to the production of this Abstract, and all authors have seen, reviewed, and approved the final version. MN, MS, PK, KN, and EB designed the study. MN performed the data collection and drafted the manuscript. MN, ØS, MS, and PK performed the analysis, interpreted the data, and prepared the manuscript.

Declaration of interests

We declare no competing interests.

Lebanese perceptions of citizenship rights for children of Lebanese mothers and Palestinian fathers: a cross-sectional survey

Sawsan Abdulrahim, Dalia Mikdashi, Zeinab Cherri

Abstract

Background Nationality in Lebanon is conveyed through patrilineal descent, depriving the children of women married to foreigners from citizenship rights, legal protections, and health and social services. Children of Palestinian fathers are especially excluded because they become stateless. Calls to remove gender discrimination from the Lebanese nationality law are often stymied by the Lebanese fear of naturalising a large number of Palestinians. We examined whether this fear extends to prevention of Lebanese women married to Palestinian men from conferring their nationality on their children.

Methods The study was based on mixed qualitative (13 focus group discussions, each of which included 8–15 Lebanese participants of similar age, socioeconomic status, and political orientation) and quantitative data (a survey of 450 adult Lebanese citizens, 41.4% men and 58.6% women, who resided in Greater Beirut) collected in 2011. Focus group data were analysed using open and thematic coding. Survey data were used to test the hypothesis that Lebanese public perceptions are in fact in favour of granting citizenship to children of women married to Palestinian men.

Findings Qualitative findings highlighted that the Lebanese see Palestinian men as undesirable husbands and fathers, mainly because of legal restrictions that could cause hardships to women and their children. Survey data, however, suggested strong public support overall for granting Lebanese women married to Palestinian men the right to confer citizenship on their children. Women were significantly more supportive compared with men; 84.5% of women replied that they agreed or strongly agreed with the policy versus 74.2% of men ($\chi^2=15.70$, $p=0.003$). This high level of support was consistent across sociodemographic categories and was not influenced by strength of identification with religion or sect. The children's right to citizenship received stronger public support than all other rights (eg, employment).

Interpretation Our findings suggest that Lebanese public opinion supports Lebanese women's right to confer nationality on their children even if the child's father is Palestinian. Support for gender equality in citizenship seems to override anti-Palestinian prejudice in relation to the wellbeing of the children of Lebanese women.

Funding Data collection for the study was supported by a grant from the Issam Fares Institute for Public Policy and International Affairs at the American University of Beirut.

Contributors

SA conceptualised and supervised all aspects of data collection and analysis. DM supervised data collection and contributed throughout the process of study implementation. SA and ZC conducted the analysis and wrote the abstract.

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Association between oral intake of dydrogesterone during early pregnancy and congenital heart disease: a case-control study

Mahmoud Zaqout, Emad Aslem, Mazen Abuqamar, Osama Abughazza, Joseph Panzer, Daniel De Wolf

Abstract

Background Congenital heart disease is the most frequent form of congenital anomaly in newborn infants and accounts for more than a quarter of all serious congenital abnormalities worldwide. A genetic cause is identified in less than 20% of cases of congenital heart disease and in most cases the cause remains unknown. In the context of the health burden of congenital heart disease, the contribution of non-inherited risk factors is important, especially if the disease is caused by a drug that can be avoided during pregnancy. We sought to determine whether maternal dydrogesterone treatment in early pregnancy is associated with congenital heart disease in the infant.

Methods A retrospective case-control study of birth defects and associated risk factors was conducted at Al Rantisi Specialist Paediatric Hospital in the Gaza Strip. Data were obtained and compared between 202 children born with congenital heart disease and a control group of 200 children who did not have congenital heart disease and were randomly selected from the same geographical populations during their admission due to different medical reasons. All children were born in the period of 2010–2013. Data were collected from June, 2013, to December, 2013, by interview with mothers. Dydrogesterone exposure was defined as any reported use during the first trimester of pregnancy. Exclusion criteria included stillbirth, chromosomal abnormalities in the child, and maternal chronic medical illnesses such as diabetes. Binary logistic regression analyses were used to identify any association between drug exposure and congenital heart disease. The study was approved by the human research ethics committee, Ministry of Health, Gaza Strip. Verbal informed consent was obtained from the children's parents.

Findings Exposure to dydrogesterone during the first trimester of pregnancy was more frequent among mothers of children born with congenital heart disease (75 of 202) than in mothers of children in the control group (36 of 200; adjusted odds ratio 2.71, 95% CI 1.54–4.24, $p < 0.001$).

Interpretation We identified a positive association between dydrogesterone use during early pregnancy and congenital heart disease in the offspring. Further studies are needed to confirm these findings.

Funding None.

Contributors

MZ was the principal investigator and wrote the Abstract. MZ and EA participated in data gathering. MZ, EA, MA, OA, JP, and DDW were responsible for the study design, interpretation of the results, and writing the manuscript, under the supervision of DDW, with statistical support from MA and editing support from JP. All authors have read and approved the final version of the Abstract for publication.

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Wellbeing and associated factors in an area C community in the West Bank: a cross-sectional study

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Abstract

Background Wellbeing is influenced by several factors, including living conditions. In Palestine, area C communities are under administrative and security control and comprise about 60% of the West Bank. UN reports indicate that area C populations are considered most susceptible to expulsion (displacement from home and from land cultivated for livelihood) and sustenance interruption. This study aims to assess the relation between wellbeing in an area C community and associated factors.

Methods We did a cross sectional survey with a systematic random sample of 426 adults representing half the households in this community, with a high response rate (96.9%). A questionnaire was designed following focus group discussions to highlight the particular context of the community, and included security and distress questions developed by the Institute of Community and Public Health (ICPH) and published internationally, and the WHO-5 wellbeing index with 50 as the cutoff point. Descriptive statistics followed by multivariate binary logistic regression to test for confounders were performed with SPSS 17. Ethics approval was obtained from ICPH's Research Ethics Committee.

Findings 413 people were included: 200 men (48.4%) and 213 women (51.6%). 171 people (41.4%) reported moderate and high levels of wellbeing. There were no differences by sex and age. Lower wellbeing was associated with the presence of one or more older people at home compared with having no older people at home (odds ratio 0.467, 95% CI 0.221–0.987, $p=0.046$) and with having a crowded home (more than three members at home) compared with lower crowding (0.225, 0.084–0.603, $p=0.003$).

Interpretation Our findings suggest that lowered wellbeing is present among families with higher crowding and with older people at home, and might be linked with poverty and the need for high levels of care, high dependency, and low socioeconomic status). Crowding at home might be linked to the special conditions found in area C, where building permits are difficult to obtain. Further studies addressing life conditions in area C are recommended to investigate the effects of these factors on wellbeing.

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Contributors

JJJ participated in study design, data collection, analysis, and interpretation. NS participated in study design, data collection, analysis, and interpretation. SM participated in data analysis and interpretation. RG supervised the work.

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Infant and neonatal mortality among Palestine refugees in Gaza, West Bank, Lebanon, and Jordan: an observational study

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Abstract

Background United Nations Relief and Works Agency for Palestine refugees in the Near East (UNRWA) provides primary health care, including antenatal care, to Palestine refugees. Infant mortality and neonatal mortality are monitored periodically, to assess the progress of mortality reduction among Palestine refugees and to guide future strategic approaches.

Methods A cross-sectional survey was conducted using the same preceding birth technique as in previous surveys. All multiparous mothers who came to the 115 UNRWA health centres in Gaza, West Bank, Lebanon, and Jordan to register their most-recently born child for immunisation were asked if their preceding child was alive or dead. We based our target sample size on infant mortality in the previous survey and included 10 894 mothers from July, 2013, to May, 2014. All participants included in the survey gave informed consent. We used multiple logistic regression analysis to identify predictors of infant mortality. The ethics office of the UN Relief and Works Agency approved the research proposal and the consent procedure.

Findings Information was collected for 10 951 preceding children. The period to which the mortality data refer is February to November, 2011. Infant mortality in the four areas combined was 20·7 (95% CI 18·0–23·7) per 1000 livebirths in 2006 and 18·0 (15·4–20·6) in 2011. Neonatal mortality in 2006 (14·0 per 1000 live births, 11·8–16·4) was similar to that in 2011 (13·7, 11·5–16·0). Potential risk factors for infant death were preterm birth (odds ratio 6·5, 95% CI 3·5–12·0), low birthweight (3·1, 1·6–6·2), consanguinity (2·5, 1·8–3·6), alert-risk pregnancy (1·8, 1·2–2·6), high-risk pregnancy (2·2, 1·4–3·6), less than 12 years of maternal education (1·6, 1·1–2·3), and six or more pregnancies (1·8, 1·1–2·9).

Interpretation Infant and neonatal mortality among Palestine refugees has not fallen significantly since 2006. Strengthening health-care services for alert-risk and high-risk pregnancies and for preterm infants is recommended to reduce mortality rates among this population. Efforts should also be made to enhance public awareness on the consequences of consanguinity.

Funding UN Relief and Works Agency for Palestine refugees in the Near East.

Contributors

MB: study design, data analysis, data interpretation, tables, figures and writing abstract. AK: study design, input for data analysis, data interpretation and abstract revision. MH: study design, data collection and abstract revision. WZ: data management, data analysis and abstract revision. AS: study design, data interpretation and abstract revision. All authors have seen and approved the final version of the abstract for publication.

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The effect of the 50-day conflict in Gaza on children: a descriptive study

Khamis Elessi, Yousuf Elmokhallalati, Ramy Abdo, Osaid Alser

Abstract

Background The UN has estimated that the conflict in Gaza between July 8 and August 26, 2014, resulted in the deaths of 2204 Palestinians, mostly civilians, and permanent disabilities in thousands of people. The aim of this study was to describe the pattern and extent of effects on children from this attack.

Methods We reviewed surveys and reports from governmental and international bodies (ministry of health and UN) and independent non-governmental organisations to compile statistics. Additionally, we reviewed the findings of 24 researchers who interviewed 430 eye witnesses of 144 Israeli attacks on civilian gatherings (houses, hospitals, schools, mosques, shops, and streets) in which at least two Palestinians were killed. We separated attacks that resulted in death of children (age <18 years). Each attack was categorised as being direct or indirect (direct attack means that bombing was intentional with no fighting in the vicinity) and we recorded whether a child was killed or injured and what the killed children were doing before attack.

Findings 530 children were killed, accounting for 24% of the 2147-total people killed. Children accounted for an estimated 30% (3303) of the 10 870 total people wounded. The field researchers of Euro-Mediterranean Human Rights Monitor covered 338 (64%) of the total 530 children killed. They focused extensively on mass attacks because it was difficult to cover hundreds of attacks taking place at the same time for 50 days. 54 597 (90%) of the raids were judged to be direct and 53 990 (89%) of these were in densely populated areas. 297 (88%) of children who were killed died in their homes. 71 (21%) of these were sitting with their families; 95 (28%) were asleep; 34 (10%) were eating; 27 (8%) were watching television or using computers. 41 (12%) of the killed children died while fleeing their houses; 31 (6%) were killed while sheltering in basements or at UN Relief and Works Agency schools; 20 (6%) died while playing; and 31(9%) were killed while doing other activities. Furthermore, the UN reported that 373 000 children needed specialised psychological support and around 1000 children will suffer permanent disabilities.

Interpretation Our findings suggest that children injured or killed accounted for a substantial proportion of civilian casualties during this conflict.

Funding None.

Contributors

Study design was done by KE, YE, and RA. Data collection was done by YE, RA and OA. Data analysis was done by KE and YE. Results were interpreted by KE and YE. The Abstract was drafted by KE and revised by all authors.

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We declare no competing interests.

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Mortality in the Gaza Strip during the period July to September, 2014: a retrospective chart review study

Mohammad Yaghi, Arild Vaktstjold, Osama A Balawi, Mahmoud Deeb Daher, Wendy Venter

Abstract

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Background The Gaza war of July to August, 2014, killed 2260 Palestinians, including 612 children, and injured more than 11 000. Around 28% of the population was internally displaced. At the height of the conflict, 11 of 31 hospitals were unable to provide services, and 48 of 97 primary health care centres were closed. The strains on the population, infrastructure, supplies, and health services may have exacerbated existing diseases and influenced non-trauma mortality in vulnerable groups. We aimed to assess non-combat mortality in the Gaza Strip during the war.

Methods Date, sex, age, and cause and place of each death were collected from all death notification forms and death reports in hospitals in Gaza for the period July 7 to August 26, 2014. The primary outcomes were the overall mortality rate, sex and age-group mortality proportions, and the proportion of deaths that occurred outside a hospital ward. The study was approved by the Ministry of Health in Gaza and WHO.

Findings 718 people died of non-combat causes during the 51 days of warfare (4.0 per 10 000 population), of whom 165 (23%) were children (age <18 years). 14 (2%) died of infectious diseases and the same number of injuries. 86 (12%) died of unspecified causes. Of adults who died, 310 (56%) were aged 70 years or older and 288 (52%) were women. 271 (49%) adult deaths occurred in a hospital ward.

Interpretation The ratio of war-related trauma mortality to baseline crude mortality was higher than the internationally proposed threshold for major complex emergencies. For background mortality, the proportion of children dying was similar to that before the war, but a markedly reduced proportion of adult deaths took place in a hospital ward. The proportions of mortality caused by infectious diseases and injuries were low. However, misclassification of cause of death may have influenced the cause-specific findings.

Funding None.

Contributors

MY organised and carried out the data collection, contributed to the study design, and interpreted the findings. AV analysed the data and contributed to the study design and interpretation of the findings. OAB contributed in the data collection and interpretation of the findings. MDD and WV initiated the study, obtained the necessary permissions, and contributed to the study design.

Declaration of interests

We declare no competing interests.

Resilience in Palestinian refugee society: a report of observations

Laila Atshan

Abstract

Background Since the advent of the Syrian refugee crisis, thousands of additional Palestinian refugees have fled the painful circumstances induced by the conflict in Syria to refugee camps in Lebanon. This report will focus on the benefits and drawbacks of resilience among Palestinian refugees in Lebanon. These refugees have historically focused on their survival, as they were repeatedly marginalised, scapegoated, and threatened by violent conflict and harsh living conditions.

Methods This report is based on professional and personal observations gathered during psychosocial work with Palestinian refugees in Lebanon that was conducted during the past 4 years, as well as approximately 25 years of working with the broader Palestinian community.

Findings Faced with intense adversity, Palestinian refugees in Lebanon have resiliently adapted to their traumas in the pursuit of a livable daily existence, ensuring their survival. Although resilience and coping skills have allowed Palestinian families and individuals to maintain functionality, fundamental traumas of poverty, humiliation, dispossession, and exile remain unresolved. Further, being continuously forced to live on survival instincts has been emotionally and physically exhausting for Palestinians generally and Palestinian refugees in Lebanon specifically.

Interpretation The influx of Palestinian refugees from Syria into Lebanon has produced myriad consequences. The crisis has collapsed the established resilient psychosocial structure that previously sustained generations of Palestinian refugees in both countries. The refugee community's resilience has been stretched to its breaking point, as all of the energy has been drained by years of living without hope and ambition. The breakdown of these mechanisms has aggravated unresolved problems and produced depression, violence, and anxiety. This complex, intergenerational trauma must be addressed with a human-rights based and recovery-oriented approach.

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Declaration of interests

I declare no competing interests.

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Awareness, attitudes, and knowledge of Palestinian doctors about evidence-based medicine: a cross-sectional survey

Loai Albarqouni, Khamis Elessi

Abstract

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Background Evidence-based medicine (EBM) is an effective strategy to integrate evidence into decision-making alongside patients' values and clinical expertise. The main aim of this study was to evaluate the awareness, knowledge, and attitudes of Palestinian physicians about EBM.

Methods This was a cross-sectional study, in which data were collected between August and November, 2014, using a web-based, 20-item questionnaire adapted from McColl and colleagues to assess awareness of, attitudes to, and knowledge about EBM. We used email and social media to survey Palestinian doctors working in health centres affiliated with the Ministry of Health, the UN Relief and Works Agency for Palestine Refugees in the Near East (UNRWA), academic, and private sectors.

Findings Of 135 physicians who completed the questionnaire, the majority were men (116; 86%), younger than 30 years old (104; 77%), resident or general physicians (117; 87%), who worked in a government health-care setting or UNRWA (104; 79%). Most of the respondents (99; 73%) welcomed the concept of EBM, agreed that EBM is useful in their daily practice (104; 77%) and can improve patient care (109; 81%), and claimed that more than half of their daily clinical practice is evidence-based (84; 62%). However, two-thirds of respondents (90; 67%) thought that practicing EBM would place demands on already overloaded doctors. Only 27% (36) had received formal training in EBM, which was received through the EBM Unit in Gaza for 64% (23) of these physicians. The major perceived barriers to practicing EBM were insufficient knowledge and skills (47; 35%), lack of managerial and institutional support (24; 18%), limited resources and free access to databases or libraries (31; 23%), work overload (27; 20%), and negative attitude to EBM among some colleagues, especially the most senior (34; 25%).

Interpretation Despite the positive attitude towards learning and implementing EBM among (mainly young) Palestinian physicians, these doctors feel that they have inadequate knowledge and skills in practicing EBM. They need effective practical educational training programmes in EBM, clinical appraisal, and literature searching skills. Importantly, the attitudes of policymakers and senior staff need to change to promote the practice of EBM within the health services.

Funding None.

Contributors

LA and KE designed the study and collected the data. LA analysed the results.

Declaration of interests

We declare no competing interests.

Nurses' perceptions about child abuse in Palestine: a descriptive exploratory survey

Intima Alrimawi, Ahmad Saifan, Ibraheem Bashayreh

Abstract

Background Despite the efforts to protect children around the world, child abuse and neglect remain serious and global problems. In Palestine, child abuse is hidden under the community culture and does not appear in the ministry of health's official reports. Little is known about nurses' perceptions about this situation. Our objective was to identify nurses' perceptions about child abuse, whether they faced such cases during their work, and how they managed these cases.

Methods Data were collected using an exploratory descriptive survey approach. 84 nurses from a major hospital in Ramallah city in Palestine were surveyed. The data was collected over a period of 3 months, starting from January, 2014.

Findings The response rate in this study was 86%. Only 33% of the participants (n=28) intended to use a referral system in co-operation with the ministry of social affairs, child protection organisations, or the police in Palestine to deal with cases of child abuse. The most frequently seen abuse case was neglect (79%, n=66), followed by psychological abuse (61%, n=51) and physical abuse (57%, n= 48), and the least frequently seen was sexual abuse (27%, n=23).

Interpretation Most participants did not know how to deal with child abuse effectively. This research provides baseline information about nurses' practice, and highlights the rationale behind it (lack of training, absence of protocols for dealing with such cases, viewing child abuse as a private issue). In this study, the factors that negatively influence nurses' practices in this area were presented. To enable the nurses to fully practice their role in reporting and preventing child abuse, these factors should be considered.

Funding None.

Contributors

All authors made substantial contributions to the conception and design of the study, acquisition of data, analysis and interpretation of data, drafting the article or revising it critically for important intellectual content, and final approval of the version to be submitted.

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Knowledge of sexually transmitted diseases among young Palestinian people: an analysis of cross-sectional survey data

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Abstract

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Background Sexually transmitted diseases (STDs) are an important reason for adults to seek health care in developing countries, given inadequate knowledge in the general population about such diseases. This study assesses the level of knowledge about STDs among Palestinians aged 14–30 years.

Methods The Palestinian Family Health Survey 2010 from the Palestinian Central Bureau of Statistics (PCBS) included questions about young peoples' knowledge of STDs, including AIDS, syphilis, gonorrhoea, fungal infections, and genital warts. A knowledge scale was developed from questions excluding AIDS disease, which is known by most young people. Internal consistency was $\alpha=0.62$. Respondents were recorded as having either no knowledge of STDs or knowledge of at least one disease. Bivariate analysis was completed using SPSS to assess the relation between knowing any STDs and age, sex, region, locality, wealth index, educational attainment, and marital and work status. Significant associations were included in a regression model to check for confounders.

Findings 4402 households were included. 1675 (38.1%) respondents knew at least one of these diseases; the rest 2727 (61.9%) knew none. Logistic regression analysis revealed that respondents in Gaza were less likely to know about at least one STD than those in the West Bank (OR 0.658, 95% CI 0.573–0.754). Female respondents were more likely to know about an STD than male respondents (1.164, 1.019–1.33). Compared with young people aged 14–18 years, knowledge of at least one STD was more likely in those aged 19–23 years (1.465, 1.246–1.723) and 24–30 years (1.315, 1.11–1.557). Respondents with more than 12 years of education (10.873, 5.842–20.225) and 12 years or less (4.24, 2.342–7.677) were more likely to know of at least one STD compared with those with no education. Respondents who were not working were more likely to know of an STD compared with workers (4.971, 4.06–6.087). Young people from better-off (1.995, 1.603–2.483) and middle class families (1.293, 1.084–1.541) were more likely to know of at least one STDs compared to those from poor families (categories defined by PCBS dependent on standard of living and monthly household income).

Interpretation Knowledge of STDs was reduced among young people who were younger, illiterate, male, poor, living in Gaza, and working. Provision of information to young people is needed through education, development of health-care services, and communication strategies focused on raising awareness of STDs.

Funding None.

Contributors

HD contributed to the conceptualisation of the Abstract and study design. NAS and HS did data analysis and interpretation. SA supervised and supported data analysis and interpretation.

Declaration of interests

We declare no competing interests.

Diagnosis, management, and causes of meningitis in the Gaza Strip: an analysis of guidelines, field assessment, and microbiological study

Bjørn G Iversen, Siri L Feruglio, Susanne Dudman, Abdelnasser Soboh, Majdi Dher, Nedal Ismael Ghuneim, Khaled Abu Ali, Mahmoud Daher, Dominique A Caugant, Kirsti Vainio, Rand Salman

Abstract

Background Reported rates of bacterial and viral (aseptic) meningitis are much higher in the Gaza Strip than in the West Bank. In the Gaza Strip the capacity for microbiological diagnostic testing is limited. The aim of the study was to assess clinical laboratory diagnosis and management of meningitis in the Gaza Strip and to identify the microbiological causes of meningitis.

Methods The assessment followed general guidelines of WHO and the US Centers for Disease Control and Prevention, using a preparatory questionnaire sent to all microbiological laboratories in the Gaza Strip. A joint assessment was conducted in May, 2014. Guidelines and procedures for microbiological services, surveillance systems, and clinical procedures for diagnosing and treating clinical meningitis were assessed. On-site field visits were done at four hospitals, including clinical wards and laboratories, and at the Gaza Ministry of Health central laboratory. Cerebrospinal fluid samples from 123 patients with clinical meningitis were consecutively collected from the Ministry of Health central laboratory from November, 2013 to June, 2014. Samples were sent in three batches (January, May, and June 2014) for microbiological analysis at the Norwegian Institute of Public Health.

Findings The assessment showed a lack of antibiotic policy and regulation of prescription in the Gaza Strip. Hospital meningitis guidelines did not follow international guidelines. All patients with suspected clinical meningitis were treated with antibiotics even when a viral cause was suspected, and often before hospital admission. Laboratories had dedicated staff and high productivity, but lacked sufficient space, equipment, and reagents, and some standard operating procedures. No molecular methods were available for bacterial and viral detection. Of 123 cerebrospinal fluid samples tested for bacteria, serogroup B *Neisseria meningitidis* was detected in eight and *Streptococcus pneumoniae* in one. Of 102 samples available for virus testing, enteroviruses were detected in 63, one of which was also positive for serogroup B *N meningitidis*.

Interpretation National guidelines and policies to promote prudent use of antibiotics in the health services are needed. Clinical guidelines for classifying and treating patients with suspected meningitis should be revised with stakeholders. A reference laboratory with defined tasks should be established. Up-to-date laboratory diagnosis of viral meningitis is urgently needed. Laboratory protocols should be improved and equipment upgraded. Spring-summer meningitis outbreaks seem to be dominated by enteroviruses. In our assessment serogroup B *N meningitidis* was the main cause of bacterial meningitis. Use of meningococcal vaccine should be considered.

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Contributors

BGI, SLF, SD, AS, and MD contributed to study design, drafting of study protocol, field visits, data collection, and analysis and interpretation of data. NIG, KAA, and MD participated in study design, field visits, data collection, and interpretation of data. DAC and KV contributed to interpretation of the study and microbiological analysis of CSF samples together with SLF and SD. RS contributed to study design and interpretation of the study. All authors have approved the final version of the paper.

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Factors associated with self-rated health among elderly Palestinian women: an analysis of cross-sectional survey data

Ni'meh A Al-Shami, Haya Shojaia, Hiba Darwish, Rita Giacaman

Abstract

Background Self-rated health (SRH) predicts mortality and social inequalities. Recently, life expectancy for women has increased as a part of the worldwide demographic transition. This study examines the determinants of self-rated health among older Palestinian women.

Methods The Palestinian Central Bureau of Statistics did a survey in 2010 that included a question about self-rated health for women aged 60 years and older. Answers were recorded within a quintile scale ranging from excellent to poor. In line with previous studies, we converted the scale into a dichotomous measure: good ("excellent", "very good", or "average") or bad ("less than good" or "bad"). Bivariate analysis assessing the relationship between sociodemographic variables and self-rated health was completed using SPSS. Significant associations were included in a binary regression model to check for confounders.

Findings 1998 elderly women were surveyed. 1138 (57%) of the women rated their health as good and 860 (43%) as bad. Regression results showed that women aged 70 years and older were more likely to rate their health as bad (897 of 1991) than were women aged 60–69 years (1094 of 1991; odds ratio [OR] 1.587, 95% CI 1.300–1.938). Bad self-rated health was more likely among women whose education did not proceed beyond elementary school (1738 of 1991) than in those who proceeded beyond secondary education (76 of 1991; 0.317, 0.162–0.622) and those who reached but did not proceed beyond secondary education (177 of 1991; 0.499, 0.399–0.735). Women with at least one reported disease were more likely to have bad self-rated health (1511 of 1991) compared with women who had no diseases (480 of 1991, 2.763, 2.180–3.503). Women whose house conditions were described as "not comfortable" had an increased likelihood of bad self-rated health (292 of 1991; 1.830, 1.402–2.390). Women in families with an income greater than the national average monthly income were less likely to have bad self-rated health (267 of 1991) than those in poorer households (630 of 1991; 0.629, 0.453–0.874).

Interpretation The results indicate that self-rated health is associated not only with increasing age, but also with elderly women's low socioeconomic status. The results indicate a need to improve the quality of life of older Palestinian women with collaboration of the health, social, and economic sectors, whereby the provision of health services is supported by concerted efforts to decrease poverty levels, and improve the living conditions of poor women.

Funding None.

Contributors

NAA-S and HS did data analysis and interpretation. HD contributed to the conceptualisation of the Abstract and study design. RG supervised and supported the study design and data analysis and interpretation.

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Moral and professional responsibilities in the context of Palestinian health-care: a qualitative study on the role of medical associations and professional societies

Abbas Rattani, Abdul-Hadi Kaakour, John Miller

Abstract

Background In view of documented and ongoing interference with Palestinian healthcare infrastructure, we aimed to identify the moral obligations of physicians and medical associations when confronted with health and human rights infringements originating from state policies and actors. The nature and extent of professional obligations may not solely depend upon the severity of a particular humanitarian crisis; moral duties to engage in oppositional actions are also shaped by contextual factors such as their likely outcome and effects.

Methods A human rights health-care framework was used to analyse whether strikes on Palestinian hospitals and health-care infrastructure constituted sufficient grounds for physicians to take action (eg, public statements and declarations, advocacy). We used the three principles of professionalism previously employed in Mateen and Rubenstein's framework (2011)—patient welfare, autonomy, and social justice—to identify specific injunctions in medical association charters. Operation Cast Lead (2008–2009) and Operation Protective Edge (2014) were used as examples of state-led attacks with consequences for health-care infrastructure. Previous and ongoing reports of destruction of this infrastructure, and consequent exacerbation of health disparities, have been catalogued by Physicians for Human Rights–Israel, B'Tselem, and Human Rights Watch. Destruction of hospitals and medical facilities were evaluated as clear infringements of human rights; similarly, persistent limitations in access to health-care resources were considered as grounds for the actions described above. As our qualitative study focused on the occupied Palestinian territories, we reviewed the mission statements, position papers, and relevant exhortations of the World Medical Association (WMA), American Medical Association (AMA), and the Israeli Medical Association (IMA) for statements on professionalism norms, ethical obligations, and social responsibilities of physicians and medical associations to oppose conflict generating medical crises, address governmental barriers to professionalism, and advocate for social justice.

Findings A review of 279 policies, codes, resolutions, statements, declarations, and position papers (210 from WMA, 21 from IMA, 48 from AMA) found that all three associations agreed on physicians' obligations to uphold and promote high standards of care. This is particularly relevant in the Palestinian context, where health disparities surpass those in Israel, especially when infrastructural or access issues are directly related to Israeli governmental policies. The WMA had issued pleas for medical neutrality and cessation of violence in times of conflict ($n=4$, 2009–2014), most notably their 2012 statement, "WMA Regulations in Times Of Armed Conflict And Other Situations Of Violence." Since the focus of our review was on the unique case of Israel and Palestine, the state-level medical association's position on professionalism norms in times of conflict was particularly relevant. A 2002 IMA position paper on armed conflict expressed satisfaction with the Israeli army's commitment to assuring medical services. The AMA made no statements about medical professional standards in times of armed conflicts, state-sponsored violence, or governmental policies in violation of human rights, but affirmed the need for physicians to be advocates of health and human rights in general, stating that persecution of physicians anywhere is a threat to professionalism everywhere (Ad Hoc Physicians Persecution Advisory Group).

Interpretation The attacks on Palestinian health-care infrastructure were violations of human rights as defined by Mateen and Rubenstein. Moreover, they served as barriers to professionalism. Medical professionals and associations have a responsibility to speak out against violations of health and human rights.

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Contributors

AR wrote the initial draft of the abstract and performed the qualitative analysis. AHK and JM provided additional ethical analysis and background research. All authors critically reviewed and approved the final version of the Abstract for publication.

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Piloting the multi-family approach in community-based rehabilitation: an observational and interview-based study

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Abstract

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Background In Palestine, as in many societies, children with a physical or mental disability and their families often experience stress related to stigma and isolation. Over the course of one year, the community-based rehabilitation programme in the north of the West Bank pioneered a multi-family group approach, originally developed in the UK, to facilitate six support groups for a total of approximately 50 mothers of children with a disability. The method is based on the premise that people who share similar situations can provide company, stress relief, and practical problem-solving ideas to each other.

Methods We conducted intervention research into the implementation and adaptation of the multi-family group approach to the local context. This research included systematic participatory observation of group sessions, reflection meetings, and training workshops, and informal interviews with 12 community-based rehabilitation workers and supervisors throughout the process of design of the project, initial specialist training of community health workers, and on-the-job mentoring. We conducted systematic comparative analysis of all observation notes and informal interviews. We obtained ethics approval and informed consent.

Findings Community-based rehabilitation teams gradually gained confidence in co-facilitating groups using the multi-family group approach techniques. The sessions combined enjoyment and relaxation with serious discussions over shared personal, family, and community experiences, and provided the participants with new ways for seeking and offering support. Over time, observations in sessions and interviews with mothers and group facilitators suggested that social isolation among group members diminished and mothers became more active in the group and the wider community.

Interpretation The multi-family group approach has meant that the group participants are no longer merely programme beneficiaries but have become active participants in the psychosocial component of community-based rehabilitation. Although in the West this approach is mostly implemented by specialists, our study shows that with intensive training and on-the-job mentoring, community health workers can successfully adapt the method to develop social support networks for mothers of children with a disability in Palestinian and possibly other non-Western settings.

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Contributors

Both authors contributed to conducting the research and writing the abstract.

Declaration of interests

We declare no competing interests.

Quality of life in patients with cancer in the Gaza Strip: a cross-sectional study

Ahmed Nimer Shamallakh, Asma M Imam

Abstract

Background Cancer is one of the most important health problems worldwide because of its high incidence rate, financial load, social impact, and mortality. Cancer is the second leading cause of death in Palestine, accounting for 12.4% of all deaths. National statistics showed that most cancer cases are diagnosed at the end stage of the disease. Late diagnosis makes it difficult to treat and control symptoms and results in low survival rates and poor quality of life.

Methods The study was conducted in two main hospitals in the Gaza Strip: Al-Shifa and the European Gaza hospital. We completed 14 qualitative in-depth interviews and 364 cross-sectional quantitative questionnaires (response rate 93.4%) with a convenience sample of attending adults with cancer at any stage, using the EORTC QLQ C-30 V.3 assessment tool. Sample size was calculated using an internet based calculator. Statistical tests were done using SPSS 20. We obtained written informed consent from participants and study approval from the public health school of Al-Quds University.

Findings The global quality of life was less than half of the full score (mean 49.9, SD 25.6). Emotional function had the lowest score (47.7, 32.3). The highest score was the cognitive (67.6, 31.6), followed by the social functioning score (59.5, 35.8). The most frequent symptoms were financial difficulties (64.7, 40.0), pain (60.1, 32.7), fatigue (59.9, 29.2), and insomnia (58.1, 39.9). In qualitative interviews respondents expressed several needs: eradication of sympathy from others and stigma, emotional support, financial aid, entertainment facilities, improved health-care facilities, and protection of the rights of patients with cancer.

Interpretation Patients with cancer reported poor quality of life in several domains. Our findings support the development of, and financial support for, psycho-oncology facilities and campaigns to raise awareness among health workers about how patients with cancer should be treated.

Funding None.

Contributors

ANS designed the study, conducted the literature search, data collection, analysis, and interpretation, and wrote the manuscript. AMI participated in study design, data interpretation, and writing the manuscript, and supervised the study.

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Adult functioning in the occupied Palestinian territory: a survey and event history calendar assessment

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Abstract

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Background The 2009 *Lancet* special issue on the Health of Palestinians noted that Palestinian voices have been marginalised in dialogues about international health and called for rigorous empirical evidence on Palestinian functioning. This study aimed to obtain such evidence.

Methods In October, 2011, a survey on current wellbeing and an event history calendar (a validated method of collecting retrospective data via a quantitative grid of key life events and time in years) covering 1987–2011 were administered to a representative sample of residents in the West Bank, East Jerusalem, and the Gaza Strip (response rate 97%; n=1778; mean age 37.04, SD 3.55; 50.3% female; 43.6% refugees). The clustered probability sample was drawn from all enumeration areas from updated 2007 Palestine Central Bureau of Statistics census maps. Instruments were administered by household interview in Arabic by trained local field workers from the Palestinian Center for Policy and Survey Research. The study was approved by institutional review boards of this centre and the University of Tennessee; written informed consent was obtained.

Findings Of the total sample, 51.3% had a family income above poverty level, 49.2% had been employed for a full year, 23.1% had inadequate food, 40.1% had inadequate water, 83.5% experienced human insecurity, 20.6% perceived government stability, 85% reported family satisfaction, and 36.3% had poor self-rated health. 38.7% (87.8% since 1987) had heard or felt the effects of a bomb, 3.3% (77.9%) had had their home raided, and 16.0% (73.8%) had witnessed humiliation of someone close to them. Travel was barred or delayed for 24.1% of those requiring travel for medical care (98.3% since 1987), 34.9% of those requiring travel to visit family (95.1%), and 32.2% of those requiring travel for work (91.9%). Mean scores (SD, range) were 3.34 (0.81, 1–5) for sense of belonging, 4.10 (0.74, 1–5) for positive marital functioning, 3.08 (1.14, 1–5) for feeling broken or destroyed, 1.08 (0.77, 0–3) for feelings of depression, and 1.13 (0.93, 0–3) for trauma-related stress.

Interpretation These findings cover a broad, representative sample of the Palestinian adult population, document functioning comprehensively, and are relevant for guiding intervention efforts and health policy in Palestine and other populations enduring long-term adversity.

Funding The Jacobs Foundation, Switzerland.

Contributors

Study design: BKB, CM, and RFB. Data collection: BKB and CM. Data analysis: CM and CA. Interpretation: BKB and CM. Writing: BKB. Editing: CM.

Declaration of interests

We declare no competing interests.

Experience of Palestinian medical students on the geopolitical barriers to accessing hospitals for clinical training: a qualitative study

Sarrah Shahawy, Megan B Diamond

Abstract

Background The movement of Palestinians in the occupied Palestinian territories is restricted by bureaucratic and physical obstacles. The objectives of this study were to characterise the barriers that Palestinian medical students face in accessing hospitals for clinical training and to understand how they affect Palestinian students' medical education and quality of life.

Methods Convenience sampling was used to recruit fourth-year to sixth-year medical students from Al-Quds University to participate in individual online surveys and focus group discussions. Informed consent was obtained electronically and verbally. 30 students completed the online survey and 36 students participated in focus group discussions. Transcripts of the surveys and interviews were coded to identify major themes. This study was approved by the institutional review boards at Harvard Medical School and Al-Quds University.

Findings Palestinian medical students faced numerous challenges during their clinical training. Students emphasised the difficulties in obtaining permits to train at East Jerusalem hospitals, including arbitrary permit rejections and long wait times. Substantial delays, searches, and mistreatment at checkpoints during their commute to hospitals in East Jerusalem and throughout the West Bank were particularly burdensome. The majority of students felt that their education and quality of life had been strongly negatively affected by their experience trying to access hospital training sites.

Interpretation Our findings suggest that medical students living and studying in the occupied Palestinian territories receive suboptimal training because of ambiguous permit rules, barriers at checkpoints, and the psychological burden of the process. These results highlight the effect that military occupation has on the education and quality of life of Palestinian medical students.

Funding WHO West Bank and Gaza Office, Advocacy Unit, Jerusalem, and Harvard Medical School, USA.

Contributors

SS designed the study, created the survey and interview questions, recruited participants, conducted the interviews, analysed and coded the transcripts for prominent themes, and contributed to the writing of the manuscript. MD analysed and coded the transcripts for prominent themes and contributed to the writing of the manuscript. All authors have seen and approved the final version of the abstract for publication.

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We declare no competing interests.

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Influence of international stakeholder and health-care agendas in the Palestinian Family Survey, 2010: a qualitative assessment of a national health survey

Rula Ghandour, Katie Bates, Sawsan Imseeh, Suzan Mitwalli, Shiraz Nasr, Doaa Hammoudeh, Ernestina Coast, Tiziana Leone, Rita Giacaman

Abstract

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Background Population health surveys play a vital part in enabling the planning, implementation, and monitoring of national health programmes and policies. However, the construction of these surveys is often determined by international stakeholders' agendas and implementation is restricted by availability of local resources. We used the Palestinian Family Survey (PFS) 2010 as a case study to inform the discussion on health surveys in the Arab region.

Methods We used qualitative research methods involving a detailed document review of all PFS materials (eg, questionnaires, interviewer instructions and training manuals, reports) to assess the construction and implementation of the PFS in the occupied Palestinian territories. We compared the of the PFS 2010 survey instruments with contemporary health policies and practices.

Findings We found a mismatch between the PFS content and data requirements at the national level. Some PFS content appeared to reflect international agendas rather than local health needs—for example, detailed questions about HIV/AIDS in a context with fewer than 100 reported cases since 1988. By contrast, health issues that were important in the context, such as mental health or exposure to violence, were not included in the PFS. There were inconsistencies in data collection by age and sex. For example, women aged 54–59 years were excluded from all survey modules except for the household roster, and there were few questions on the health of women who had never married.

Interpretation Although population surveys are an important source of evidence in resource-poor settings, these findings suggests a need to re-evaluate health surveys, taking into account the necessity of addressing health concerns within their specific national context, while retaining the ability to monitor international health targets.

Funding Emirates Foundation, London School of Economics Middle East Centre.

Contributors

All authors contributed to the conceptualisation of the study and participated in data analysis and writing the Abstract.

Declaration of interests

We declare no conflicts of interest.

Association between water supply and early childhood development in Palestine: a descriptive analysis of demographic and health survey data

Ghassan N Shakhshir

Abstract

Background The proportion of the Palestinian children who are not on track in their early development is higher than that among their peers in neighboring countries. This study aimed to assess and explain the association between unimproved water supply and early childhood development, and examine its implication for policy and programmes in Palestine.

Methods Demographic and health data obtained from nationally representative surveys were merged and analysed. Descriptive analysis was used to investigate the magnitude and patterns of inadequate access to domestic water supply (running water from household tap) and its association with early childhood development in Palestine. A causal mediation model was used to assess the pathways through which access to domestic water supply interacts with poverty and affects early childhood development. Data were analysed using the structural sequential method and the potential outcome framework, while confounders (such as age, sex, and mother's education) were controlled for using bootstrapping and propensity matching tests. Ecological data about multidimensional socioeconomic, health, and environmental conditions in 52 communities in the West Bank, Jerusalem, and Gaza were gathered. Data were analysed using Z score (level of dispersion) to develop a single summary measure capturing the multidimensional influence of water supply on children's wellbeing and development at the community level.

Findings For one standard deviation increase in the access to unimproved water supply, a 0·308 increase was predicted for child underdevelopment due to indirect effect mediated by poverty, and a 0·084 increase due to direct effect. The ecological data indicated that the average Z score of unimproved water supply variables in the target communities could be indicative of possible low scores of early childhood development.

Interpretation Inadequate water supply might exacerbate the negative effects of poverty and inadequate family care on early childhood health and development. These findings suggest that holistic perspectives are needed in systems and interventions to monitor child wellbeing and development.

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Contributors

This study was done as part of PhD thesis at the Public Health and Policy Department, London School of Hygiene and Tropical Medicine.

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Patient flow, triage, and mortality in Al-Shifa hospital during the Israeli operation Protective Edge, 2014, in the Gaza Strip: a review of hospital record data

Mads Gilbert, Sobhi Skaik

Abstract

Background The Israeli Army military operations against Gaza from July 8 to Aug 26, 2014, left more 2100 Palestinians dead and injured over 11000. According to UN data, at least 551 of those killed and at least 3436 were those injured were children aged 18 years or younger. We assessed patient flow, triage, and mortality at Al-Shifa Hospital in Gaza City (Shifa) during this period.

Methods We reviewed hospital records for the emergency room, intensive care unit, and operating rooms in Shifa. Total numbers of casualties seen in the emergency room, admissions, deaths, operations, and ICU admissions were recorded.

Findings 8592 people came to the Shifa emergency department following bombardments and other attacks. After crude emergency room triage, 4389 (51.1%) needed further medical attention, while 490 (5.7%) were dying or dead on arrival. 1808 (21.0%) live patients were admitted after detailed triage, of whom 78 (4.3%) died in hospital. Most patients were civilians injured by aerial bombing (drones, F-16 jets, helicopters) or heavy ground or naval artillery shelling. 842 (46.6%) admitted patients needed major life-saving surgery with anaesthesia, including 190 laparotomies, 146 orthopaedic fixations, 106 craniotomies, 69 thoracotomies/airway interventions, 38 vascular procedures, 49 amputations, 68 debridements, and 176 other procedures. Because most patients needed more than one intervention, the total number of procedures exceeded 842. The surgical intensive care unit treated 253 patients, including 197 (77.9%) male and 56 (22.1%) female patients. 87 (34.4%) of cases were children. 164 (64.8%) patients were discharged alive, 51 (20.2%) died in intensive care, and 38 (15%) were transferred to other hospitals.

Interpretation A high proportion of fatal injuries presented dead on arrival at hospital. The rate of admission to ICU doubled and ICU mortality rates nearly tripled compared with those during the the Israeli operation Pillar of Defence in November, 2012, probably because of the extreme character of the 2014 attacks, combined with shortages of supplies and hampered evacuation caused by siege. Despite severe shortages of medical staff and unpaid salaries, Shifa staff and volunteers managed the long-lasting influx of patients with serious trauma.

Funding None.

Contributors

Both authors contributed equally, and both worked clinically in al-Shifa during the reported period.

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Severe amputation injuries after Israeli military operations in Gaza: a retrospective, clinical follow-up study

Hanne Heszelein-Lossius, Yahya Al-Borno, Yasmeen Keita, Nashwa Skaik, Hazim Shawwa, Mads Gilbert

Abstract

Background Four major attacks on Gaza since 2006 have killed around 4000 and injured more than 17 000 Palestinians. An unknown number of the wounded suffered extremity injuries with amputations. The long-term functional, somatic, and psychosocial consequences of traumatic amputations in Gaza have not been reported. We describe the demography, anatomical distribution, and causative factors of a sample of traumatic amputations in Gaza in this ongoing study.

Methods We studied 147 randomly selected Palestinian surviving casualties in Gaza who had suffered traumatic amputations following Israeli military operations during the period 2006–2014. All participants were aged over of 16 years when included. One additional patient was invited to participate but declined. We organised the study at a key rehabilitation centre, the Artificial Limb and Polio Centre (ALPC) in Gaza City. Data were collected from June to October, 2014. We recorded date and mechanism of injury as well as results of in-depth clinical examinations in each survivor. Records and self-administrated questionnaires in Arabic were translated into English and data analysed with SPSS common version 21·0. The Palestinian Ministry of Health, the board and directors at Al-Shifa Hospital, and ALPC approved the protocol. We obtained written informed consent from each patient.

Findings 11 women (7·5 %) and 136 men (92·5 %) with traumatic amputations participated. The mean age was 30·6 years (range 16–64). 85 patients (57·8 %) had unilateral lower extremity amputations, 31 (21·1%) bilateral lower extremity amputations, and 31 (21·1%) other amputations. Attacks from drones were reported by the survivors as the reason for explosions that caused amputation injury in 85 of the cases (57·8%). 52 (61·2 %) of such drone attacks had occurred during declared military operations. 24 (31·6 %) had occurred during periods of ceasefire. Nine (11·8%) participants reported only the month and year of attack, not the exact day.

Interpretation Military operations in Gaza have caused a large, unknown number of traumatic amputations. In our study, most participants had unilateral or bilateral lower limb amputations and the majority of injuries followed attacks with drone-carried weapons. Several participants were wounded during ceasefire periods. The need for rehabilitation is difficult to meet because of limited local resources.

Funding None.

Contributors

MG conceived the original idea for the study and participated in writing the abstract. HHL handled the data, participated in parts of the data gathering, and wrote the abstract. YBJ, YK, NS, and HS gathered the data for the study.

Declaration of interests

We declare no competing interests.

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Health differentials among women aged 15–54 years in the occupied Palestinian territories: a cross-sectional study of data from the Palestinian Family Health Survey 2010

Katie Bates, Rula Ghandour, Sawsan Imseeh, Suzan Mitwalli, Shiraz Nasr, Doaa Hammoudeh, Ernestina Coast, Tiziana Leone, Rita Giacaman

Abstract

Background Available evidence suggests that women in the occupied Palestinian territory are served by an overburdened health system that prioritises family planning and reproductive services above provision for other health care that women may need. To address this gap, we investigated ill-health and disparities in the health of all women across the life course, not just those who are married with children, in the occupied Palestinian territories.

Methods Cross-sectional data for women aged 15–54 years from the Palestinian Family Health Survey 2010 were used (n=15 734). Determinants of binary health outcomes were analysed (self-reported chronic illness, self-reported acute illness, self-rated health) using separate weighted logistic regression models with region, locality, sociodemographic, and socioeconomic explanatory variables (n=14 819).

Findings 11% of women reported a chronic illness (n=2176), 22% reported an acute illness (n=3811) and 21% rated their health as poor (n=3708). Parity did not increase the odds of reporting a chronic or acute illness. Highly parous women (4–7 and ≥8 children) rated their health as poorer compared with nulliparous women (odds ratio 1·65, 95% CI 1·01–2·69 and 1·73, 1·06–2·81, respectively). Pregnant women rate their health as poorer (1·29, 1·10–1·52), but are no more likely to report an acute illness and less likely to report chronic illness than non-pregnant women (0·706, 0·51–0·98). Compared with being married, being divorced was associated with poorer self-rated health (3·97, 1·53–10·30), whereas being single was associated with less acute illness (0·59, 0·39–0·88). Women from Gaza reported lower levels of illness and better self-rated health than women in the West Bank, despite poorer health infrastructure and similar burdens of illness.

Interpretation Despite the focus of the health system on family planning and reproductive services, we found little evidence that married women with children have increased ill-health in the occupied Palestinian territory. A broader range of health services for women is needed.

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Contributors

All authors contributed to the conceptualisation of the study and participated in data analysis and in writing the Abstract.

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The role of non-governmental organizations in the health sector in the occupied Palestinian territory: a cross-sectional qualitative study

Marina Tucktuck, Ranin Darkhawaja, Tareq Areqat, Shatha Mansour, Rita Giacaman, Motasem Hamdan

Abstract

Background Non-governmental organizations (NGOs) have had an important role in the Palestinian health sector before and after the creation of the Palestinian Ministry of Health (PMoH) in 1994. Few studies have addressed the role of NGOs in the Palestinian health sector. The aim of this study was to investigate the current role of local and international NGOs (INGOs) in the development of the Palestinian health system's policies and programmes.

Methods A qualitative study of nine semi-structured interviews was conducted with key representatives from the main actors in the Palestinian health sector: the PMoH, five local NGOs and three INGOs. After obtaining verbal consent, interviews were conducted from October to December 2014, and focused on the NGO's scope of work, priority setting, regulation, coordination and influence on national health policies.

Findings The majority of the local NGOs focused on primary healthcare and rehabilitation, while most of the INGOs worked on health development and emergency response. Local NGOs and INGOs complemented the work of the PMoH in health-service provision. Both were constrained by the predetermined national health strategy set by the PMoH without the active involvement of other actors. INGOs' activities were constrained by pre-determined international health agendas, available funding and restrictions related to the military occupation. The coordination mechanism between the PMoH, local NGOs, and INGOs is limited to a health and nutrition cluster, a partnership of organisations that is committed to providing needs and evidence-based responses, with little effect on policies and plans. Despite available methods to avoid duplication and fragmentation of work and to fill service provision gaps, some NGOs agreed that the limited coordination and discontinuity of certain projects restrict their ability to fully meet the health needs of the Palestinian population.

Interpretation Local and international NGOs have a crucial role in providing essential services for Palestinians, with the PMoH as the main actor. Although there is some coordination between the PMoH, local NGOs and INGOs on meeting community needs, this remains limited by funding constraints. The contribution of NGOs to policy formulation is small. Stakeholders' active involvement in national health policy development, with a focus on local needs, should be encouraged.

Funding None.

Contributors

All authors participated in defining the research question, and in data collection and analysis, under the supervision of MHa, MTu and RDa wrote the first draft of the Abstract. All authors commented on the draft and approved the final version for publication.

Declaration of interests

We declare no competing interests.

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Intensity of conflict and fertility in the occupied Palestinian territory: a longitudinal study

Valeria Cetorelli, Marwan Khawaja

Abstract

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Background The occupied Palestinian territory has one of the highest fertility rates in the world. We examined the association between the intensity of conflict in the region and the fertility behaviour of Palestinian women.

Methods Intensity of conflict was measured using information from the human rights organisation B'Tselem on the yearly number of Palestinians killed for the period 1993–2009. The outcome variable, fertility, was investigated using birth history data from the 2010 Palestinian Family Health Survey. Cox regression models were used to assess the association between number of fatalities and women's likelihood of starting childbearing, adjusting for secular trend and relevant covariates.

Findings According to B'Tselem data, 5268 Palestinians were killed between 1993 and 2009. Birth history data from the 2010 Palestinian Family Health Survey included a total of 6292 first conceptions during the study period. We found a significant positive association between intensity of conflict and fertility after adjustment for time trend (1990s, 2000s), governorate (North Gaza, Gaza, Dier El-Balah, Khan Yunis, Rafah, Jenin, Tubas, Tulkarm, Nablus, Qalqiliya, Salfit, Ramallah and Al-Bireh, Jericho, East Jerusalem, Bethlehem, Hebron), locality type (urban, rural, and refugee camp), household wealth (poorest, poor, middle, rich, richest) and woman's education (less than secondary, secondary or higher). A 1% increase in the yearly number of fatalities was associated with a 12% increase in the likelihood of starting childbearing for women in the Gaza Strip (hazard ratio 1.12; 95% CI 1.07–1.16) and a 9% increase for women in the West Bank (1.09; 1.06–1.13).

Interpretation The results are relevant to the design of reproductive health interventions in emergency situations. Although the precise mechanisms of association between conflict and conception are not addressed here, efforts to maintain and strengthen family planning programmes during times of more intense conflict might be considered.

Funding None.

Contributors

VC and MK conceived and designed the study, gathered and interpreted the data, and wrote the Abstract. The views expressed are those of the authors and do not necessarily reflect the views of the United Nations.

Declaration of interests

We declare no competing interests.

Indications and patterns of lesions of liver biopsy and fine-needle aspiration cytology in adults and pediatric patients in the West Bank during 2008–13: a cross sectional study

Reham F Ghanim, Lubna A Malhis, Samar S Musmar, Husni Maqboul

Abstract

Background Liver diseases are common in Palestine and few studies have been done to study them. Liver biopsy is the gold standard for diagnosis, assessment of prognosis, and development of a treatment plan for liver diseases. Our objective was to assess the indications and patterns of results in adults and children who had a liver biopsy in the West Bank during 2008–13.

Methods This cross sectional descriptive study was done in the Medicare Laboratory in Nablus and the Al Makassed Hospital Laboratory in Jerusalem, which represent the northern and southern West Bank, respectively. Large numbers of liver biopsies are done in these centres, in patients from most of West bank, by professionally certified pathologists and radiologists. The study included pathology reports of patients of all ages and both sexes who had a liver biopsy in these laboratories between Jan 1, 2008, and Dec 31, 2013. Seven reports were excluded because of incomplete data. Clinical data, indications, and biopsy results were studied and analysed using SPSS 17. We obtained permissions from An-Najah Research Department and institutional review board, and from both study laboratories. All laboratory reports used numbers to identify patients instead of names.

Findings We collected 387 reports from 67 children (age <18 years) and 320 adults. In the adult group, mean age was 52 years (SD 16); 50% were male and 50% female. In the paediatric group, the mean age was 5 years (6·04 SD); 52% were male and 48% female. Most liver biopsies were indicated to investigate focal or diffuse intrahepatic abnormalities on imaging studies in adults (174 cases, 54·4%) and unexplained jaundice in children (26 cases, 38·3%). Metastatic lesions were the most common pathological finding in adults (81 cases, 28·8%) and hepatitis the most common finding in children (19 cases, 28·4%). Percutaneous needle biopsy was the most used procedure. χ^2 testing for correlation between different variables and the pathological results of liver biopsy showed a significant association ($p < 0.01$) between age and pathological result, but not between sex and biopsy result. Indications and the main clinical presentation were also found to be significantly associated with histopathology result ($p < 0.01$).

Interpretation The study showed that the practice of liver biopsy in Palestine is consistent with worldwide practice in terms of indications and techniques. It revealed differences between results for children and adults. A potential limitation is the accuracy of histopathological reports.

Funding None.

Contributors

RF and LM (first authors) worked on methodology and study design, data collection, and data analysis and interpretation. SM supervised the work, approved the protocols to be followed in the study, and provided comments and advice to improve the work. HM is the director of the Medicare Laboratory, provided access to all data that needed to be collected, and helped in organising the information from a clinical point of view.

Declaration of interests

We declare no competing interests.

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Quality of life of people wounded in the 2014 conflict in the Gaza Strip: a cross-sectional study

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Abstract

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Background In the past 6 years, three conflicts have taken place in the Gaza Strip. The last conflict, in 2014, continued for 51 days and left 2191 people dead and 10 895 wounded. We aimed to assess quality of life of people wounded in the 2014 conflict in the Gaza Strip.

Methods A cross-sectional, descriptive design was used in this study. The target population was adults (older than 18 years) who were wounded in the 2014 conflict in Gaza Strip. A snowball technique was used to recruit participants. Organisations that take care of war victims were contacted to recruit participants. Nursing students, friends, and colleagues were asked to recruit participants. Quality of life was assessed with the WHO Quality of Life (WHOQOL-BREF) questionnaire. Approval was obtained from the appropriate research organisation in Gaza Strip and participants provided written informed consent.

Findings 315 participants were asked to complete the questionnaire and 304 agreed to participate (response rate 95·5%). Age of participants ranged between 18 and 76 years with a mean of 29·3 years (SD 11·6). 197 (64·8%) were men and 107 (35·2%) were women. The mean scores for items of the WHOQOL-BREF ranged between 1·08 and 2·44, and mean scores were less than 2·0 for 18 of the 26 items. Mean scores for the main domains were very low: overall quality of life 3·94 (SD 1·87; maximum 8), physical 12·73 (5·80; 28), psychological 11·47 (4·58; 24), social relations 6·55 (2·37; maximum 12), and environment 11·66 (5·04; 32). Several variables, such as age and need for hospital admission, had affected quality of life.

Interpretation People injured in the 2014 conflict in the Gaza Strip reported very low quality of life across all domains. Health and public policy makers should take prompt action to improve wellbeing in this group.

Funding None.

Contributors

NIA-E-N conducted the data analysis. All authors participated equally in all other parts of the study.

Declaration of interests

We declare no competing interests.

Prevalence of salmonella in different poultry and meat food products in Hebron district: a prevalence study

Yaser Issa, Alaa Abu-Rayyan, Suad Hemidat, and the Environmental Health Team at Hebron Public Health Directorate

Abstract

Background Salmonella continues to be a leading cause of food-borne enteric disease in many countries and is responsible for substantial human suffering, loss of productivity, and mortality. Although the disease is underreported, an estimated 1.4 million people were affected in 2008 in the USA, with an overall health cost of US\$2.6 billion. Poultry meat is an important vehicle of food-borne salmonella infections in people; the proportion of all salmonellosis cases that are associated with meat and poultry consumption was about 29% from 2004 to 2008. We aimed to estimate the prevalence of salmonella in raw, precooked, and cooked food poultry and meat food products in Hebron district, occupied Palestinian territories.

Methods As part of the routine activities of environmental health inspectors in Hebron Public Health Directorate, 61 poultry and meat products (sausage, grilled chicken, cooked shawarma, chicken turkey, steak turkey, boneless chicken, frozen chicken, spiced uncooked shawarma, and schnitzel) were collected from restaurants, university cafeterias, and hospitals and transported to the central public health laboratory in Ramallah in portable, insulated cold-boxes. Among these samples were 11 cooked and 50 raw or ready to cook products. Salmonella tests were conducted by the team at the central public health laboratory of the Palestinian ministry of health.

Findings Seven samples (11.5%) tested positive for salmonella: two samples of frozen chicken (3.2%); two of schnitzel (3.2%), and three of turkey (4.9%). All the samples that positive were uncooked.

Interpretation No salmonella was found in the 11 cooked samples, which suggests that effective cooking can eliminate contamination with salmonella. Subsequent spread of salmonella may occur during processing due to cross-contamination. However, assessment of the true risk to public health from salmonella-contaminated poultry meat and of the benefit of reducing contamination is complicated by several factors operating between farm and fork.

Funding None.

Contributors

YI designed the study, analysed and interpreted data, and prepared the final report. AA-R, SH, and the environmental health team participated in collecting samples. AA-R and SH prepared the samples to be ready for transporting to the laboratory. AA-R participated in transporting collected samples to the laboratory in Ramallah. YI, AA-R, and SH participated in the conceptualisation and writing of the report, and have seen, reviewed and approved the final version.

Declaration of interests

We declare no competing interests.

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Factors associated with end-stage renal disease in the Gaza Strip: a case-control study

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Abstract

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Background End-stage renal disease (ESRD) is a major public health problem. Identification of risk factors for ESRD can inform intervention policies to minimise disease morbidity and mortality. The main objective of this study is to fill a gap in research literature by establishing baseline information for factors associated with ESRD among patients receiving haemodialysis.

Methods In a hospital-based, case-control study, 132 patients with ESRD (cases) and 132 patients free from renal problems (controls) were interviewed by researcher using a structured questionnaire between January and August, 2013. Cases were patients who attended the four dialysis centres at Gaza governmental hospital; they were selected by use of proportional stratified random sampling. Inclusion criteria for cases were diagnosis of ESRD and age older than 18 years, and for controls any other diagnosis and age older than 18 years. Controls were every other patient attending four governmental hospitals as outpatients, matched to cases by age, sex, and location. We used SPSS (version 19.0) for logistic regression analyses with estimations of odds ratio and 95% CI. Approval to undertake the research was obtained from the ethics committee in the Gaza Strip and the Palestinian Ministry of Health. Written informed consent was obtained from all participants.

Findings The most common modifiable factors associated with ESRD were hypertension (present in 56 cases, 42.4% vs 27 controls, 20.5%), obesity (55, 41.7% vs 45, 34.1%), diabetes mellitus (37, 28.0% vs 22, 16.7%), analgesic drug (29, 22.0% vs 12, 9.1%), kidney stone (28, 21.2% vs 6, 4.5%), glomerulonephritis (26, 19.7% vs 8, 6.1%), and stress (23, 17.4% vs 8, 6.1%). ESRD was significantly associated with low socioeconomic status, education, and employment. Multiple logistic analysis controlling for age, sex, and location showed that significant predictors of ESRD were hypertension (OR 42.5, 95% CI 8.26–218.5; $p < 0.0001$), glomerulonephritis (26.19, 4.52–151.5; $p < 0.0001$), obesity (3.99, 1.60–9.94; $p = 0.003$), and low monthly income (4.02, 1.79–9.02; $p = 0.001$).

Interpretation In our study, hypertension was the most common modifiable factor associated with ESRD. Obesity, diabetes mellitus, analgesic drug and kidney stone were other important associated factors. A programme of sociocultural, economic, and educational approaches is needed to improve public awareness regarding renal failure and its risk factors in the Gaza Strip. Consideration for more frequent monitoring of kidney function among patients with diabetes and hypertension who are older than 40 years might be warranted.

Funding None.

Contributors

HAO, YA, and KEN contributed equally. All authors have seen and approved the final version of the Abstract for publication

Declaration of interests

We declare no competing interests.

Acknowledgments

This study was part of the thesis needed to obtain an MPH for HAO at the School of Public Health, Al-Quds University, that was supervised by YA. We thank the nursing staff in the dialysis centres at Ministry of Health Hospitals for their sincere cooperation.

Determinants of municipal solid and hazardous waste management in the occupied Palestinian territory: a cross-sectional study

Hendia Abu Nabaa', Ni'meh A Al-Shami, Issam A Al-Khatib

Abstract

Background In the occupied Palestinian territory, accumulation of municipal solid waste is a serious problem, with substantial political and occupational issues needing to be resolved, despite limited resources. We assessed attitudes, knowledge, and practices related to hazardous and municipal solid waste and views on how waste should be managed.

Methods Qualitative data were collected from 15 focus groups with men and women older than 18 years from different localities (urban, rural, and camps) and regions (north, middle, and south) of the West Bank and Gaza Strip. In 2011, we implemented a quantitative study in the West Bank and Gaza Strip on 1882 people representative randomised stratified three-stage sample. The data were collected through a structured questionnaire including questions (derived from the focus group discussions) about the respondents' role in disposing of their household solid waste, satisfaction of the collecting services, awareness regarding household hazardous waste, and willingness to treat organic waste. χ^2 testing was used to check for significant associations of those variables with region, locality, age, sex, number of family members, educational attainment, employment, marital status, home ownership, socioeconomic status, region, and locality. Binary logistic regression was done to identify confounders. Data were analyzed with SPSS (version 17.0).

Findings The qualitative findings showed that lack of skilled manpower, irregular collection services, inadequate equipment, inadequate legal provisions, and resource constraints all compromised waste management in the occupied Palestinian territory. Quantitative results revealed that residents of the Gaza Strip were the least satisfied with municipal solid waste management (OR 2.410, 95% CI 1.627–3.569) and the least interested in encouraging composting (3.604, 2.679–4.849) or reusing solid waste (6.277, 4.587–8.589), but were most active in cleaning indoors (0.625, 0.431–0.905), and less likely to have basic knowledge of hazardous waste (1.626, 1.222–2.16) than residents of the northern West Bank. Compared with urban dwellers, rural and camp dwellers were more likely to clean their houses (0.738, 0.561–0.971 and 0.295, 0.157–0.552, respectively), and to know more about hazardous waste (0.616, 0.414–0.917 and 0.719, 0.576–0.987) and camp dwellers were more likely to encourage reusing solid waste (0.454, 0.296–0.695) whereas rural dwellers were more likely to compost organic waste (0.502, 0.402–0.626). Affluent respondents were less interested in encouraging composting municipal solid waste (1.769, 1.161–2.696). A positive association was found between completion of university education and participants' ability to encourage reusing (0.490, 0.267–0.897) and composting (0.417, 0.242–0.720) municipal solid waste and their awareness of hazardous waste (0.378, 0.204–0.703) compared with uneducated participants. Three-member households were less willing to compost municipal solid waste (1.66, 1.009–2.730) than households with one to two members. Middle aged participants (age 25–34 and 35–44 years) were more likely to participate in cleaning indoors (0.572, 0.368–0.889 and 0.584, 0.338–0.889, respectively) and moving solid waste to outside (0.519, 0.370–0.726 and 0.486, 0.337–0.700) compared with the youngest participants (aged 18–24). Women were less likely to move solid waste outside than were men (2.551, 2.014–3.230). House owners were less likely to have basic knowledge of hazardous waste compared with house renters (1.431, 1.100–1.861).

Interpretation An implementation of existing policies for solid waste management is required on the national scale, combined with support for public education and training. In Gaza, there is a need for rehabilitation of the whole municipal solid waste system.

Funding None.

Contributors

HA'N and NAA-S analysed and interpreted data and wrote the report. IAA-K designed the study and developed the questionnaire.

Declaration of interests

We declare no competing interests.

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Prevalence of non-communicable diseases and use of health services in the Gaza Strip: an analysis of a household survey

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Abstract

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Background There is a growing need for and interest in targeting non-communicable diseases (NCDs) in Gaza Strip. However, little is known about their distribution among different population groups and about the use of health services by patients with NCDs. We aimed to identify the differences in prevalence of NCDs and use of health-care services among different groups of patients with NCDs in the Gaza Strip.

Methods We interviewed 760 households in the Gaza Strip in July, 2013, about the characteristics of household members, including occurrence of NCDs, and their use of and expenditures on health services. We analysed data according to the frequency distribution of variables and used χ^2 testing to assess the statistical difference between grouped variables.

Findings 661 (12.7%) of the 5192 individuals had at least one NCD. Prevalence of NCDs was higher among refugees than non-refugees (485 [13.4%] of 3618 vs 176 [10.5%] of 1574; odds ratio [OR] 1.23, 95% CI 1.023–1.477; $p=0.027$) and was associated with increasing age (Cramer's $V=0.545$): at least one NCD was reported in 78 (2.9%) of 2699 individuals aged less than 20 years, 110 (7.5%) of 1470 aged 20–39 years (OR 4.237, 95% CI 3.19–5.628), 248 (35.4%) of 701 aged 40–59 years (28.679, 21.091–38.995), and 225 (69.9%) of 322 aged 60 years or older (77.944, 56.165–108.169; $p<0.0001$). 545 (82.5%) of the 661 patients with NCDs regularly accessed health services at least once every 3 months. The choice of health provider for regular care for NCDs differed by refugee status; 327 (85.8%) of 381 refugee patients compared with 121 (73.8%) of 164 non-refugee patients chose public providers for the regular care of their NCDs (OR 2.152, 95% CI 1.37–3.38; $p=0.001$).

Interpretation The prevalence of NCDs is positively associated with increasing age. Entitlement to health care in the Gaza Strip through refugee status contributed to increasing the detection of NCDs and refugee status influenced the choice of health-care provider for NCDs. There is a need to expand entitlement to health services to achieve universal access to health care in order to respond to the increasing challenge of NCDs in the Gaza Strip.

Funding WHO 2013 special grant for Priority Areas in Public Health in the Eastern Mediterranean Region.

Contributors

MA designed the study, developed the questionnaire, contributed to field workers' training, analysed the data, and wrote the manuscript. AAZ contributed to field workers' training and to data management and analysis. Both MA and AAZ approved the manuscript of the abstract.

Declaration of interests

We declare no competing interests.

Coordination of health-service provision in humanitarian crises: a systematic review of suggested models

Tamara Lotfi, Lama Bou-Karroum, Andrea Darzi, Rayan Hajjar, Ahmad El Rahyel, Jamale El-Eid, Mira Itani, Hneine Brax, Chaza Akik, Mona Osman, Ghayda Hassan, Fadi El-Jardali, Elie A Akl

Abstract

Background National and international humanitarian relief organisations play an important part in humanitarian crises. There is evidence of lack of coordination between organisations providing health services in public health emergencies. Our objective was to identify published models of coordination between organisations funding or delivering health services in situations of humanitarian crisis worldwide.

Methods We followed standard systematic review methodology. We searched Medline (1946 to week 1 of March, 2014), PubMed, EMBASE (1980 to week 10 of 2014), the Cochrane Central Register of Controlled Trials, CINAHL, PsycINFO, and the WHO Global Health Library. We only included papers published in English. We used search terms such as “refugee”, “disaster”, “conflict”, “coordination”, “cooperation”, “international organization” and “non profit organization”. Two teams of two reviewers screened titles and abstracts in duplicate and independently for potential eligibility, retrieved full texts of citations judged as potentially eligible by at least one reviewer, screened full texts in duplicate and independently for eligibility, and resolved disagreement by discussion. When disagreement was not resolved, a third reviewer made the final decision. We also searched websites of relevant organisations. One reviewer reviewed titles of search hits. We then obtained full texts of articles identified as potentially eligible, and two reviewers screened them in duplicate and independently, compared their results, and resolved any disagreement by discussion. We included reports describing models of coordination in sufficient detail to allow reproducibility. We also included reports describing implementation of identified models as case studies.

Findings Our search captured 14 309 citations. The screening process identified five models of coordination of delivering health services: the health cluster approach (with 15 case studies), the “who is where, when, doing what” mapping tool (4Ws; four case studies), the sphere project model (two case studies), the 5x5 model (one case study), and the model of information coordination (one case study). The 4Ws and 5x5 models focused on coordination of services for mental health, while the remaining models did not focus on a specific health topic. The health cluster approach appeared to be the most widely used. One case study used a mixed implementation of the health cluster approach and the sphere model. We did not identify any model of coordination related to funding of health services.

Interpretation This systematic review identified three proposed coordination models that have been implemented by organisations funding or delivering health services in situations of humanitarian crisis. There is a need to compare the effectiveness and efficiency of these different models.

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Contributors

EA and FE conceived and designed the study. EA, LBK, TL, JE, AD, RH, AR, HB, CA, MO, GH, and MI performed the study. TL, EA, AD, RH, and AR analysed the data. TL, LBK, and EA wrote the paper.

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We declare no competing interests.

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Injuries and infections in 37 casualties from the 2014 Gaza war: a descriptive study

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Abstract

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Background 215 casualties were evacuated to the West Bank and East Jerusalem for treatment during the conflict in Gaza in 2014. We aimed to describe injuries and infections in Gazan patients receiving treatment at two East Jerusalem hospitals.

Methods 37 patients were included in a convenience sample using two inclusion criteria: transfer from Gaza to East Jerusalem between July 8 and August 30, 2014, and a war injury. 46 patients were invited and 44 participated after providing written consent. Seven were excluded because of ethical considerations (n=4) or lack of documented war injury (n=3). Data were obtained from the patients' medical files. Trauma severity was assessed using the Injury Severity Score (ISS), ranging from 1 to 75, based on the Abbreviated Injury Scale (AIS), ranging from 1 (minor) to 6 (untreatable) for each anatomical region. Bacteriology was assessed at Jerusalem hospitals. Birzeit University's research ethics committee approved the study.

Findings 19 male and 18 female patients aged 9 months to 53 years were included. The patients sustained injuries from weapons (n=19), other (n=16), or unknown causes (n=2), in the head or neck (n=14; mean AIS 3·4, SD 1·7), face (n=7; 2·9, 1·3), chest (n=6; 2·8 0·4), abdomen (n=6; 3·3, 0·5), extremities (n=21; 3·1, 1·1), and externally (n=31; 1·9, 0·8). The median ISS score was 17 (interquartile range 95–29). The main mechanism was blast injury. Shrapnel, crush, and burns were the most common injury types, resulting predominantly in wounds (n=30) and fractures (n=28). 25 patients had at least one positive bacterial culture. Four had obvious infection without microbiological data. *Acinetobacter* spp was the most common pathogen (n=16).

Interpretation The patients in this study endured traumas of differing severity. Physical and psychological sequelae are likely. Our sample is not representative of the 11 000 injured during the war. Seen in a larger context, global efforts are needed to rehabilitate injured people and rebuild Palestinian society in Gaza.

Funding S G Sønneland Foundation.

Contributors

AEOE, MS, and KJEB collected the data, analysed the data, and wrote the abstract. RG designed the study, facilitated the data collection in the hospitals, and gave guidance on the analysis and the abstract. EF assisted in assessing trauma severity. EB facilitated contact between Birzeit University and the University of Oslo and contributed to the analyses and the writing of the abstract.

Declaration of interests

We declare no competing interests.

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