Civilians' experience in the Gaza Strip during the Operation Cast Lead by Israel

Majdi Ashour, Nedal Ghuneim, Aed Yaghi

Background Conflicts and wars are increasingly included in health research and discussions about public health. On Dec 27, 2008, Israel began Operation Cast Lead on the Gaza Strip, occupied Palestinian territory (oPt), that resulted in the deaths of more than 1400 people, injuries to more than 5400, and damage and destruction of thousands of houses. Therefore the effects of Operation Cast Lead on different dimensions of health and the lives of civilians in the Gaza Strip were investigated.

Methods The Palestinian Medical Relief Society asked a stratified random sample of households in the Gaza Strip in February, 2009, about their experiences during Operation Cast Lead. A ten-item social and health scale was developed and was based on questions in reports by Birzeit University's Institute of Community and Public Health, Ramallah, West Bank, oPt, after the Israeli invasion of five West Bank towns in 2002. The reliability of the scale was assessed by use of Cronbach's coefficient (α=0·67). The scale consisted of two well differentiated subscales. The first consisted of two items—ie, damage to the home, and experience with displacement. The second subscale consisted of eight items—impaired access to health services and drugs, manifestations suggestive of anxiety and psychological distress, disruption of electricity, disruption of potable water supplies, disruption of landline telephone, disruption of waste collection, food shortage, and loss of source of income. Data were analysed with SPSS (version 19.0) for the frequency distribution of variables. The social and health ten-item scale and its two subscales were compared by use of a multivariate analysis of the governorates of residence, after controlling for refugee status and the type of family.

Findings 346 (48%) of 718 interviewed households had non-household people living with them, 326 (45%) were hosted by other people for at least 24 h during the Operation Cast Lead, and 342 (48%) had damage to their houses. 354 (49%) had impaired access to health services and 353 (49%) to drugs. 623 (87%) had at least one screaming household member, 620 (86%) cried, 466 (65%) loss of appetite, and 588 (82%) nightmares. 690 (96%) had disruption of electricity for all or most of the time, 249 (35%) disruption of potable water supplies entirely and 257 (36%) for most of the time, 185 (26%) disruption of their landline phone for all or most of the time, and 402 (56%) disruption of waste collection. A loss of income was reported by 233 (32%) households, and 611 (85%) had food shortages. The mean score on a social and health scale of 0–10 was 5·94 (SD 1·99) for all governorates in the Gaza Strip, 0·94 (0·63) with the first subscale of 0–2, and 5·00 (1·75) with the second subscale of 0–8. These mean scores with the scale and two subscales were significantly different ($p<0·0001$) between the five governorates in the Gaza Strip. The governorate of Gaza had the highest mean (7·43 [1·32]) with the ten-item scale, followed by North Gaza (6·52 [1·32]), Deir al Balah (5·38 [1·51]), Khan Younis (4·32 [1·71]), and Rafah (3·77 [1·29]). The governorate of North Gaza had the highest mean with the first subscale (1·36 [0·56]), followed by Gaza (0·98 [0·6]), and Rafah (0·98 [0·62]); and Deir al Balah (0·78 [0·58]) and Khan Younis (0·61 [0·55]) were the least affected. The governorate of Gaza had the highest mean with the second subscale (6·44 [1·14]), followed by North Gaza (5·16 [1·11]) and Deir al Balah (4·6 [1·26]); and Khan Younis (3·71 [1·42]) and Rafah (2·79 [0·95]) were the least affected.

Interpretation The effects of the Operation Cast Lead on the life of civilians living in the interviewed households were, according to their reported perceptions, devastating, and geographically linked to the intensity of activities of the operation.

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Contributors
All authors contributed to writing this Abstract.

Conflicts of interest
We declare that we have no conflicts of interest.

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Human insecurity and associated factors in the Gaza Strip 6 months after 2008–09 Israeli attack: a cross-sectional survey

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Background **The human-insecurity framework focuses on an individual's protection from social, psychological, health, economic, and political threats. It lends itself to supporting health and wellbeing, and addresses threats to survival and development in conflict. Conventional and war-related factors that were associated with reports about human insecurity in the Gaza Strip after the winter 2008–09 Israeli attack were investigated in this study.**

Methods **A cross-sectional survey was undertaken 6 months after the Israeli attack. One adult per household was randomly chosen from 3017 households (97% response rate) for reporting insecurities and threats. 1524 (51%) of 3017 individuals were men and 1493 (49%) were women. A weighted human-insecurity measurement was constructed with factor analysis (Cronbach's α=0·83). The scores were divided according to their distribution into two categories of insecurity: low to moderate and high. Crosstabs and logistic regression models were used to analyse associations between human insecurity and conventional factors (age, sex, education, occupation, and residence), and war-related factors, including destruction of home and private property, displacement, and reports of distress and suffering.**

Findings **Mean human insecurity score was 3·78 (SD 0·69) of a total of 5. 1645 (55%) respondents reported low to moderate insecurity, and 1331 (44%) high insecurity. Individuals aged 65 years and older who reported having higher education—ie, college diploma, BA, and graduate degrees (p=0·017), good standards of living (p<0·0001), and full-time employment (p<0·0001) had lower insecurity. Women reported higher insecurity scores than did men (p=0·012), and respondents from large families (p=0·01). Reports of objective measurements—ie, private property (p=0·019) and neighbourhood destruction (p<0·0001), and displacement (p<0·0001) as a result of the attack, and reports of subjective measurements—ie, distress (p<0·0001) and suffering (p=0·01) were associated with increased human insecurity scores.**

Interpretation **The results are in accord with reports of human insecurity showing that people with the fewest resources have an increased likelihood of insecurity, and lend support to the inclusion of conventional and war-related factors in the assessment of human insecurity in conflict. Although intervention through support of Gazans with food and other aid is important, interventions need to address the cause of human insecurity—namely, the violence of war and the sieges. The main limitations of this study include its cross-sectional design, making the establishment of cause difficult and the establishment of temporality impossible because of the lack of insecurity data before the Israeli attack in 2008–09.**

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Contributors

All authors participated in the conceptualisation and analysis of, and writing the Abstract; and have read and approved the final version.

Conflicts of interest

MZ, WH, NMEAR, and RG are Palestinians living under Israeli military occupation. The other authors declare that they have no conflicts of interest.

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Use of maternal health services in the Gaza Strip, occupied Palestinian territory: a survey of households

Majdi Ashour, Graham Watt

Background The total fertility rate in the Gaza Strip, at 5·4 births per woman in 2006, is among the highest in the world, and results in substantial need and demand for antenatal, perinatal, and postnatal health-care services. Access to a range of services is determined by many factors, including health-system structure and arrangements, and is complicated by the protracted political conflict and the continued economic hardship, which have worsened since 2006.

Methods Data were obtained from a survey of 832 households in the Gaza Strip that was mainly undertaken in February, 2009. Members of households were asked about their demographic and socioeconomic characteristics, and use of health-care services. The study population (n=6247) included 890 married women of childbearing age (15–49 years). Data for the frequency distributions of health-service use were analysed with SPSS (version 19.0). χ^2 test was used to assess significance.

Findings 313 women were or had been pregnant in the year before the interviews. 187 (60%) received their main source of antenatal care from the UN Relief and Works Agency (UNRWA), 86 (27%) from the Ministry of Health (MOH), both free of charge, 25 (8%) from private physicians, and 15 (5%) from non-governmental organisations (NGOs). 200 (64%) pregnant women used the services of more than one antenatal-care provider; 117 (59%) sought additional antenatal-care services of private physicians and 42 (21%) attended NGO clinics. 19 (6%) pregnant women had changed their main provider of antenatal care since 2006. 280 women had given birth in the year before the interviews. 187 (67%) gave birth at MOH hospitals, 44 (16%) in NGO hospitals, 35 (13%) in private physicians' clinics, nine (3%) in private hospitals, and five (2%) in hospitals of the Police Medical Services (PMS). Women from households with lower incomes used government hospitals (MOH and PMS) more often than did those with higher incomes. 138 (76%) of 181 women from lower-income and 54 (55%) of 99 from higher-income households gave birth in government hospitals (p<0·0001). A higher proportion of women without than with health insurance coverage delivered in government hospitals (59 [84%] of 70 *vs* 133 [63%] of 210; p=0·0046). 148 (77%) of 192 mothers who delivered in government hospitals were satisfied with the childbirth services, compared with 40 (91%) of 44 in private facilities, and 43 (98%) of 44 in NGO hospitals (p=0·0014). 68 (24%) mothers had changed their place of giving birth from the place of a previous delivery in the 3 years before the study. 40 (59%) of these women changed from the private sector, and 55 (81%) moved to government hospitals. 89 (61%) of 146 mothers were seen by a physician during the postnatal period at UNRWA, 30 (21%) in government health facilities, and 27 (18%) at private physicians' clinics. The choice of provider for postnatal care differed significantly by refugee status (p<0·0001)—88 (79%) of 111 refugee mothers used UNRWA's services for provision of postnatal care, and 23 (66%) of 35 non-refugee mothers used government health services.

Interpretation The results of this survey indicate the relative stability of the choice of providers of antenatal-care services by pregnant women, and suggest that the economic adversity of the Palestinian population, as a result of the Israeli siege, has led to increased use of childbirth services that are provided free of charge. The childbirth services provided by government hospitals and used by most mothers can be thought of as a safety net for families that are poor and uninsured, but the lower maternal satisfaction in these services is cause for concern. Although coverage of antenatal care services is excellent, access to high-quality postnatal-care services needs to be improved.

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Contributors
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Conflicts of interest
GW is a trustee of the UK charity Medical Aid for Palestinians. MA declares that he has no conflicts of interest.

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Childbirth at checkpoints in the occupied Palestinian territory

Halla Shoaibi

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Background 10% of pregnant Palestinian women were delayed at checkpoints every year from 2000 to 2007, while travelling to give birth in hospital. These delays resulted in 69 births, and 35 infant and five maternal deaths at the checkpoints. Generally, the type and severity of the delay-related morbidity are not recorded. National and international laws are not clear about the consequences and penalties of arbitrary delays in allowing pregnant women access to hospital during labour. Since April, 2005, the UN Commission on Human Rights has issued several resolutions. However, no legal recourse has been taken to address the issue of pregnant Palestinian women giving birth at Israeli checkpoints. The aims in this study are to describe the context of childbirth in the occupied Palestinian territory and the effects of checkpoint activity on the access of pregnant women to hospital during labour. The status of maternal and infant deaths at checkpoints in the context of international law are considered, and, particularly, the criteria for crimes against humanity in accordance with the Rome Statute of the International Criminal Court.

Methods The study was undertaken through desk research and legal-case analysis, with data from criminal cases filed during the International Criminal Tribunal for the former Yugoslavia and the International Criminal Tribunal for Rwanda.

Findings Palestinian women's choice of place for giving birth is determined not only by the availability and affordability of services, like in most countries, but also by their ability to reach hospital maternity services during labour, and military closure and siege. Restriction of movement has resulted in an increase in births at home rather than in a hospital; data indicate that only 8% of all births took place at home in 1999 compared with 33% in 2002. Women have to deal with uncertainty and delays when prevented from getting to a hospital because of checkpoints. Their coping mechanisms in reaction to the fear of being unable to reach hospital on time include acceptance of non-hospital settings for childbirth, with reduced standards of care and increased risks to them and their babies.

Interpretation The denial of passage to Palestinian women in labour, resulting in increased numbers of childbirths at checkpoints and en route to the hospital, is consistent with the criteria for crimes against humanity in accordance with article 7(1)(k) of the Rome Statute of the International Criminal Court—ie, "other inhuman acts of a similar character intentionally causing great suffering, or serious injury to body or to mental or physical health", and meets with the presence of "widespread or systematic attack directed against any civilian population". Further research is needed to assess whether and how such a case could be made to the Rome Statute of the International Criminal Court.

For more on the **Rome Statute of the International Criminal Court** see http://untreaty.un.org/cod/icc/statute/romefra.htm

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Conflicts of interest
I declare that I have no conflicts of interest.

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Variation in service-providers' prescribing behaviour and policy implications for women with genitourinary tract infections in Ramallah, occupied Palestinian territory

Rula Ghandour, Rana Khatib

Background Worldwide, infections of the reproductive and urinary tracts are reasons why women most often seek health care. These infections are associated with adverse pregnancy outcomes and negatively affect the quality of life of women. Resistance to antibiotics that are active against uropathogens has been noted worldwide, but few data for microbial resistance patterns in Ramallah, West Bank, occupied Palestinian territory, are available. Although some treatment guidelines for infections of the reproductive and urinary tracts might have been available in clinics in 2010 when the study was undertaken, practitioners were generally not aware of the existence of such guidelines. The aim in this study was to assess variations in service-providers' prescribing behaviours for infections of the genitourinary tract in selected women's health clinics in Ramallah, and to provide evidence needed to inform improvements in policy and practice.

Methods Women and service providers in 11 clinics that provide women's health services in Ramallah were interviewed in a survey. Ministry of Health, UN Relief and Works Agency, and non-governmental clinics in urban, rural, and refugee camps also took part in the survey. Data for 100–120 cases per clinic were gathered during 4 months. Women were interviewed by use of a pretested structured questionnaire, and physicians completed a pretested form. Appropriateness of treatment was determined by the drugs selected, dose regimens, and duration of treatment, assuming that the diagnosis was correct.

Findings 162 (15%) of 1052 women were diagnosed with any urinary or reproductive tract infection. Their mean age was 31 years (SD 9). 156 (96%) women were married and in the low and middle socioeconomic groups (67 [43%] and 75 [48%], respectively). The drugs prescribed to 132 (81%) of 162 women at the time of diagnosis were not in accord with treatment guidelines. Inappropriate drugs were prescribed to 62 (70%) of 89 women with reproductive tract infections, 56 (95%) of 59 with urinary tract infections, and all 14 with both infections (women with both infections were not included in the other two categories). 65 (40%) of 162 women were prescribed drugs that were inappropriate for their indications, 22 (14%) for dose regimen, and 81 (50%) for duration of treatment.

Interpretation Written treatment protocols informed by results of studies of local microbial resistance patterns, with mechanisms to ensure implementation, are needed to guide practitioners in providing the correct treatment and avoiding the emergence of resistant bacterial strains. Provision of continued education for physicians, with feedback and supervision, especially about rational antibiotic use, is essential.

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Contributors
RG contributed to the study design, did the data analysis, and wrote the first and final drafts of the Abstract. RK was the main designer of the study, helped in the analysis of the data, and read and commented on the first and final drafts of the Abstract.

Conflicts of interest
We declare that we have no conflicts of interest.

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Health-seeking behaviour and acknowledgment of illness by rural Palestinian women

Linda Majaj, Majed Nassar, Manuela De Allegri

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Background **Life in the occupied Palestinian territory (oPt) is characterised by constant political dilemmas, deteriorating socioeconomic conditions, and a highly fragmented and challenged health system. Additionally, a rapid epidemiological change affects all members of the Palestinian society, with an increased effect on women and their health status. Health status and health-care provision in the oPt have been assessed in many studies; by contrast, the elucidation of the health-seeking behaviours of individuals has been the focus of only a few. In this qualitative study, we intended to fill the gap in knowledge by assessing the health-seeking behaviour of rural Palestinian women.**

Methods **We adopted the Andersen behavioural model to assess how predisposing characteristics, enabling factors, and need affect women's health-seeking behaviour in the oPt. In three purposely selected villages in Ramallah, West Bank, we undertook 30 semistructured interviews with women who were purposely selected on the basis of their socioeconomic and educational backgrounds (per village, five women with a minimum of 3 years of college education and who were employed, and five with basic or no education and who were not employed), and seven key-informant interviews. Data were recorded, transcribed, coded, and independently analysed by LM and MDA. LM triangulated the information reported by the women with that reported by the key informants and obtained through direct observations.**

Findings **Women tended to delay seeking professional care and used over-the counter drugs and home treatments for the most common acute illnesses, but they sought prompt professional attention for maternal care. Additionally, women hardly used preventive and educational health services, despite wide availability in their communities. Their health-seeking choices were the result of the interplay of several factors—a gendered cultural obligation to understate health complaints, resulting in a widespread reluctance to address them openly; a rooted awareness that women ought to care first and foremost for their families rather than for their own health; the generalised belief that health is in the hands of Allah, implying that women alone can do little to prevent illness and maintain health; inadequate financial affordability and geographical accessibility that often induce women to choose the cheapest and closest services, even when these do not match their preferences; and quality of care, and rating private services better than public services, mostly because of better provider-patient interactions.**

Interpretation **Health-care providers should take into consideration women's tendency to understate their health complaints and work to assess women's objective health needs in relation to their subjective perceptions. Interventions should be designed to help women recognise and express their health needs with increased openness. Additional strategies, such as complex national, political, and economic interventions, ought to be developed to foster female empowerment, thus enabling women to overcome sociocultural barriers in access to care. Women's use of health services, especially preventive-care services, should be encouraged by involving influential key individuals in their communities. Furthermore, investments in improvement of quality of care are likely to result in increased health-service use.**

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Contributors
LM and MDA were responsible for the study design. LM prepared and translated the software for data gathering with contributions from MDA and MN. LM, with support from MN, was responsible for gathering data. LM and MDA did the data analysis. All authors contributed to the literature review and to writing the Abstract.

Conflicts of interest
We declare that we have no conflicts of interest.

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Parents' perceptions of care for chronically ill children in a paediatric intensive care unit in the occupied Palestinian territory

Ibtisam M Ghrayeb

Background As a result of advances in medical treatments, more children with life-threatening illnesses survive for longer and require palliative care for longer. Young children (aged 1–3 years) have traditionally received less palliative care than have adults. Parents' attitudes and beliefs with respect to obtaining the best available care for chronically ill children are similar in the occupied Palestinian territory to those in most other countries, although Palestinians in general have a fatalistic view (ie, God's will) of life and disease. The extended family are often the source of help in caring for both healthy and ill children. The objective of this study was to describe parents' perceptions of care for their child in a paediatric intensive care unit.

Methods The study was undertaken at the paediatric intensive care unit at Makassed Hospital, East Jerusalem, occupied Palestinian territory, between January and April, 2009. A total of 50 children (28 boys and 22 girls) of 200 admissions met the inclusion criteria for the study—ie, had a chronic illness and were aged 1–3 years. Patients were assigned to nine categories of chronic illnesses on the basis of International Statistical Classification of Diseases and Related Health Problems 9 codes—cancer (n=9), cardiovascular disease (3), neuromuscular disease (8), respiratory illness (5), gastrointestinal disease (8), haematological or immunological illness (6), metabolic disorder (4), genetic or congenital defect (7), and renal disease (0). The mothers had a structured interview at the unit. In three cases, the father was interviewed. Data were presented as crude percentages.

Findings 30 (60%) of 50 mothers indicated that they did not receive professional help to care for their child, and relied on parents and the extended family. 28 (56%) did not know if their child had received treatment for pain reduction, and 28 (56%) were worried about the lack of resources at home after being discharged from hospital. 28 (56%) asked for moral support and encouragement, in addition to skilled nursing care. 34 (68%) families indicated that they wanted everything possible to be done to extend the life of their child. 14 (28%) families preferred to change the institution if they had a conflict with the health-care provider because the occupied Palestinian territory does not have ombudsmen to resolve issues. None of the parents reported that their child had been seen by a dietitian.

Interpretation Parents of children with chronic illnesses do not receive adequate health-care services. The treatment and care, and the communication between the doctor and patient or parent should be improved.

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Contributors
I designed the study, and analysed and interpreted the data.

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Parental discipline of children: results of a national family health survey in the occupied Palestinian territory

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For the **Pan Arab Project for Family Health survey** see www.pcbs.gov.ps/Portals/_pcbs/PressRelease/English_Report.pdf

Background Families are the main protectors of their children. However, the prevalence of violence against children by parents and other family members is well documented. Forms of child discipline are determined by a wide range of factors. The aims of this study were to assess the use and determinants of different disciplinary practices used by parents of children aged 2–14 years in the occupied Palestinian territory, and to identify parents and children at high risk of violence for service provision that includes effective counselling and prevention.

Methods The Pan Arab Project for Family Health survey, 2006, included seven questions about the use of some disciplinary methods to teach children aged 2–14 years proper behaviour. The Kish table method was used to select one child per family. The interviewee was asked whether he or she or any members of the household had used these disciplinary methods with the child during the past month. 8643 families with a child in this age group answered these questions. Questions about discipline were classified as two new variables: nurturing discipline (2489 [29%] of 8643) and aggressive discipline (3529 [41%]). Bivariate analysis was used with nurturing and aggressive discipline as dependent variables, and 18 sociodemographic variables that included child, parent, and household characteristics. Of the new sociodemographic variables that were computed, the most important were two that were defined by amenities that were indicative of wealth (ie, car, central heating, DVD or video cassette recorder, and dishwasher) and the family's intellect (ie, use of computer, internet, and library). Those significant in the bivariate analysis were then analysed with logistic regression.

Findings Girls were less likely to be disciplined than were boys, and a rise in the number of children at home increased the likelihood of children being aggressively disciplined. Increase in the mother's education and working outside the home increased the practice of nurturing discipline and reduced the practice of aggressive discipline. Aggressive discipline was practised much more often in the Gaza Strip than in the West Bank, occupied Palestinian territory. Nurturing discipline was more likely to be used by families living in rural areas and less likely by families living in the camps. Non-refugee families, irrespective of their residence, were less likely to practise nurturing discipline. The presence of amenities at home that indicated intellect greatly increased the likelihood of the use of nurturing discipline and reduced the likelihood of the use of aggressive discipline. Families having amenities at home indicating wealth were less likely to practise nurturing discipline.

Interpretation The newly computed variable defined by household amenities indicating intellect describes a new category of families, with low and high incomes, that nurture their children.

Funding None.

Contributors
SH did the statistical analysis and most of the writing. MFS contributed intellectually to the writing and preparation of the Abstract.

Conflicts of interest
We declare that we have no conflicts of interest.

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Smoking among adolescents and teenagers living under conflict: cross-sectional surveys in three settings

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Background Despite efforts to reduce the prevalence of tobacco smoking, cessation is a major challenge for adolescents and teenagers in low-income and middle-income countries. Smoking prevalence and the association between it and selected determinants, including violence, in adolescents and teenagers were investigated in the occupied Palestinian territory (oPt), Colombia, and Argentina.

Methods Three cross-sectional surveys were undertaken in 2006 in Jujuy, Argentina, and in 2008 in West Bank, oPt, and Medellin, Colombia. Children (aged 12–17 years) were selected by use of cluster sampling of schools in all three countries, and neighbourhoods in Colombia. They completed a self-administered questionnaire that included questions about smoking habits, demographic characteristics, and exposure to violence. The main analyses were χ^2 test and logistic regression, and were restricted to the questions for the comparable age group (14–15 years) in the three settings.

Findings 3238 (86%) of 3765 Argentinian children, 3107 (99%) of 3138 Palestinian children, and 1998 (99%) of 2018 Colombian children participated in the study. Prevalence of smoking was 325 (23%) of 1386 Palestinian, 688 (31%) of 2254 Argentinian, and 104 (8%) of 1324 Colombian children. Minor differences were noted in smoking prevalence between Colombian (42 [7%] of 644 girls *vs* 62 [9%] of 680 boys; 3%, 95% CI –1 to 6) and Argentinian boys and girls (357 [29%] of 1238 *vs* 331 [33%] of 1015; 4%; –3 to 11), whereas the difference was greater between Palestinian boys (283 [37%] of 770) and girls (42 [7%] of 616; 30%, 20 to 39). Palestinian and Argentinian children tried smoking before the age of 8 years with prevalences of 28 (9%) of 323 and 63 (9%) of 688, respectively, compared with 15 (4%) of 412 Colombian children. 130 (40%) of 323 Palestinian, 180 (44%) of 412 Colombian, and 313 (46%) of 684 Argentinian children smoked cigarettes most often when aged 12–13 years. Palestinian children more often reported exposure to physical (554 [40%] of 1386) and verbal (585 [42%] of 1386) violence by their parents than did Argentinian children (582 [26%] of 2241 and 312 [14%] of 2241, respectively). Palestinian and Argentinian children reported similar amounts of exposure to physical violence from strangers (178 [13%] of 1386 *vs* 291 [13%] of 2243, respectively) and weapons (136 [10%] of 1386 *vs* 190 [8%] of 2243, respectively). The prevalence of smoking among Argentinian children who reported exposure to physical violence from strangers (soldiers or gang members) was 158 (54%) of 291 (odds ratio for smoking *vs* non-smoking children 3·21, 2·50 to 4·13) and 96 (51%) of 190 (2·55, 1·89 to 3·43) in those exposed to weapons compared with 98 (55%) of 178 (3·08, 2·17 to 4·39) and 72 (53%) of 136 Palestinian children (2·79, 1·91 to 4·08), respectively.

Interpretation The results indicate international differences, but support the association between exposure to violence and smoking habits. Policy makers and educators need to give attention to the high prevalence of smoking among adolescents and teenagers living under conflict.

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AH and NMEAR were responsible for undertaking the Palestinian study, EA and EPS for the Argentinian study, and LFD and NEM for the Colombian study. NMEAR was responsible for conceptualising the idea, doing the analysis, and drafting the Abstract, and the other coauthors helped in interpreting the results and contributed to the writing of the Abstract.

Conflicts of interest

We declare that we have no conflicts of interest.

Patients' perceptions of access to care for cardiovascular diseases and diabetes mellitus in Ramallah: a qualitative assessment

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Background Cardiovascular diseases and diabetes mellitus present an increasing challenge for health care in the occupied Palestinian territory (oPt). Effective access to health care is a core prerequisite to the effective management of the two diseases. A main goal for policy makers is to improve access for patients to the services they need. However, improvement of access needs a thorough understanding of the barriers to health care encountered by patients. The aim in this study was to show the main barriers to health-care access that are reported by patients with cardiovascular diseases and diabetes mellitus attending clinics in Ramallah, West Bank, oPt.

Methods A qualitative method based on theory developed from data generated during field research was used to develop a framework of patients' perceptions of access to health care and management of illness. Data were gathered as part of a larger project (Mediterranean Studies of Cardiovascular disease and Hyperglycaemia: Analytical Modelling of Population Socio-economic transitions) from four clinics selected to represent the main health-care providers in the oPt: an outpatient cardiology clinic (urban setting) and three primary health-care clinics (rural and refugee-camp settings). 40 patients had exit interviews and 16 had in-depth interviews; 12 in-depth interviews were done with patients' family members, and eight in-depth interviews with the clinic staff.

Findings Factors that are related to patients and systems interact to form barriers or facilitators to health care and effective illness management, and were noted in all three themes that became apparent from the interviews: availability (central physical location and distance from home, patient's waiting time, availability of the needed drugs and laboratory tests, and the presence of specialist staff); affordability of drugs that were not provided at the local formulary and thus were not provided to patients free of charge, and needed laboratory tests that were not available at the centre; patients' acceptability of or satisfaction with care (previous social ties between patients and providers; sense of belonging to or ownership of the centre; patients' views of the importance of seeking care; and patients' expectations of what providers should inform them about and how they should deal with their illness). The last theme became apparent differently between primary and secondary health-care centres—patients at the primary health-care centres expressed higher satisfaction than for secondary health care, determined by strong social ties and a sense of belonging to the providers and the health-care centre.

Interpretation For patients, health services are not only places for the provision of health care, albeit varied, but they are also sites of social relations. Patients' perceptions of their access to health care differ, dependent on their socioeconomic, political, and cultural influences, and should also be taken into serious consideration in future policy development.

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Contributors
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We declare that we have no conflicts of interest.

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Pharmacy practice in occupied Palestinian territory: reality and difficulties

Khaled Qadah, Mai Al-Aker, Haleama Al Sabbah

Background The pharmacist is an essential part of the health-care system in the occupied Palestinian territory (oPt), providing advice and guidance to patients. The reality and difficulties of pharmacy practice in the oPt are not supported by any data. The aim in this study was to draw attention to the reality, and describe the pharmacy profession in the area.

Methods Reports at the central office of the Pharmaceutical Association, Jerusalem, West Bank, which describes the pharmacy workforce in the oPt, and the Nablus office (largest branch office) were reviewed. Key individuals—secretary of the Pharmaceutical Association, head of pharmaceutical policy and pricing department at the Ministry of Health, and an assistant professor in the Faculty of Pharmacy at An-Najah National University, West Bank—were interviewed. The main questions were what are the main problems in the pharmacy practice; who is responsible for the problem; what are you doing to resolve the problem; and what are your recommendations to improve pharmacy practice.

Findings The oPt has 4745 pharmacists with a density of 12·4 per 10 000 population compared with WHO's target of five pharmacists per 10 000 population. One community pharmacy serves 3100 people compared with WHO's target of 5000. About 82 (11%) of 723 pharmacists in Nablus are unemployed, and 245 (34%) of 723 work in community pharmacies. Women make up most of the pharmacy workforce in Nablus. The key individuals stated that the numbers of pharmacists and pharmacies are higher than the needs of the pharmacy practice in the oPt, there is a lack of employment opportunities for the pharmacists, and pharmacists should comply with laws and regulations (eg, owner of a pharmacy must be a pharmacist, individual dispensing the drugs should be a pharmacist or a pharmacist assistant, and pharmacists have to adhere to the drug pricing set by the Ministry of Health and pharmaceutical association).

Interpretation The increase in the number of pharmacists in the oPt needs to be matched by the number of employment opportunities for them, in addition to the creation of continuous learning programmes.

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Cross-shift changes in lung function in Palestinian farmers during low and high exposure to pesticides: a longitudinal study

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For the **American Thoracic Society and European Respiratory Society guidelines** see http://www.thoracic.org/statements/resources/pfet/PFT2.pdf

Background Farmers and other workers in agriculture are at risk of inhalatory exposures to a wide range of agents—inorganic dust from the soil, organic dust containing microorganisms, mycotoxins, allergens, decomposition gases, and pesticides. In the occupied Palestinian territory, a wide range of agricultural activities are mostly undertaken on small family-based farms. Palestinian farmers and household members are exposed to high amounts of pesticides through improper application, storage, and disposal. Farmers still use illegal pesticides such as azinphos-methyl, dichlorvos, and cypermethrin. They use them in higher amounts than is necessary, rarely use personal protective equipment, prepare (mix) and store pesticides at home, and clean the protective equipment at home. Even occupational exposure to low amounts of organophosphate pesticides has been associated with restrictive lung dysfunction, and airway narrowing and obstruction, or both. The aim in this study was to assess the cross-shift changes in lung function in relation to exposure to pesticides in a sample of male Palestinian farmers.

Methods 250 farmers were systematically selected from an alphabetic list obtained from Beit-U'mmar municipality village, West Bank, containing the names of all 3000 registered farmers, and they were invited to participate. 195 male farmers between the ages of 22 years and 77 years had lung function tests before and after shift during exposure to high (September, 2006) and low amounts (April, 2007) of pesticide. All 195 farmers had pre-shift lung function tests and 180 had post-shift tests during September, 2006. In April, 2007, 161 of 195 farmers had pre-shift lung function tests and 134 had post-shift tests. Overall, 126 (65%) farmers had lung function tests on all four occasions. 11 farmers with cross-shift changes of 500 mL or more were excluded, leaving 115 (59%) in the analysis. Manoeuvres were in accord with the American Thoracic Society and European Respiratory Society guidelines. All farmers answered questions about sociodemographic characteristics, and factors such as quantity of pesticides, farm size, years of working in farming, work conditions, and exposure to pesticides and dust during work were registered on both occasions. Frequency distributions of independent variables (sociodemographic characteristics, and exposure factors) were computed. Differences in mean lung function tests during cross-shift and between seasons were analysed with dependent *t* tests. Analyses were stratified to assess the effects (potential confounding and heterogeneity) of age and smoking status on the lung function changes during shift or season.

Findings No associations were noted between lung function differences in cross-shift and indicators of pesticides or dust. However, the cross-shift reduction in forced expiratory volume in 1 s (FEV_1) was more pronounced during high exposure than during low exposure (50 mL, 95% CI 24 to 76, *vs* 17 mL, –13 to 48, respectively). In young, non-smoking farmers (age ≤50 years), the mean cross-shift change in FEV_1 was 77 mL (23 to 130) during high exposure compared with 8 mL (–64 to 50) during low exposure. By contrast, in older farmers who smoked or were ex-smokers, the cross-shift changes were quite similar (35 mL and 40 mL, respectively) during high and low exposures.

Interpretation The cross-shift reduction in FEV_1 was most evident during high exposure to pesticides, suggesting a possible obstructive effect of pesticide exposure on lung function in rural male farmers in the occupied Palestinian territory.

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Contributors

All authors participated in the conceptualisation of, and writing the Abstract; have seen, reviewed, and approved the final version; and helped in designing the study. FKAS and KN gathered the data. FKAS, KN, and PK wrote the first draft and did the preliminary analysis. FKAS, MS, KN, EB, and PK did the data analysis and interpretation.

Conflicts of interest

We declare that we have no conflicts of interest.

Veterinary practice in the West Bank: an assessment of antibiotic prescriptions

Khawla Salem Njoum–Odeh

Background Although no data are available for the West Bank, occupied Palestinian territory (oPT), the inappropriate veterinary prescription of antibiotics elsewhere has led to international concern because of the adverse effects on animal and human health through the development of resistant bacterial strains, and the effects of antibiotic residues (allergy, and reproductive and developmental effects). The West Bank has 189 licensed veterinary surgeons who treat animals mostly without referring to laboratory diagnosis and antibiotic-sensitivity tests, showing the weakness of guidelines, regulations, and arrangements for monitoring. The Veterinary Control Department, Ministry of Agriculture, Ramallah, is active in the confiscation of antibiotics, and drugs that are expired, illegally imported, not registered, and unauthorised. However, the department does not have the laboratory capacity to undertake quality-control testing of drugs prescribed in veterinary practice. The extent to which antibiotic prescribing in veterinary practice in the West Bank meets international criteria was assessed.

Methods 11 of 76 licensed veterinary surgeons in private practice in the West Bank were randomly selected from a list of veterinary surgeons and association, and telephone interviewed by use of a special questionnaire to enquire about the prescription of antibiotics. The registration processes for veterinary drugs produced by local manufacturers were reviewed, with reference to official reports—Veterinary Lab Report 2010, Veterinary Control Department Report 2010, Epidemiology Department Report 2010, and World Organization for Animal Health/Performance of Veterinary Services Evaluation Report June 2010.

Findings Only three of 11 veterinary drug manufacturers in the West Bank regularly registered their drugs during 2006–10. 14 veterinary antibiotics were mainly used for the treatment of 12 bacterial diseases, usually without reference to sensitivity tests. Nine of 11 veterinary surgeons prescribed antibiotics from their own clinic, five of nine after sending samples for laboratory diagnosis, but only two of five waited for the results. Ten veterinary surgeons thought that farmers were unlikely to adhere to their advice about withdrawal periods, and often sold animals that were undergoing treatment. Inconsistencies were noted between laboratory results and antibiotic prescribing in veterinary practice. For example, veterinary surgeons often prescribed gentamicin for *Salmonella* spp infection even though most such infections are resistant to this antibiotic. Enrofloxacin is prescribed for almost all infections in poultry, but only four bacteria show sensitivity to it. The combination of penicillin and streptomycin is very effective against *Staphylococus aureus*, but veterinary surgeons do not prescribe it.

Interpretation Because the oPT is not a full state with controlled borders, monitoring and prevention of the illegal importation of unauthorised drugs are huge challenges. Therefore, the establishment of a national programme is important to promote and monitor antibiotic prescribing by veterinary surgeons, and promote awareness among professionals and farmers about best practices, including the early detection of and reporting adverse effects. Additionally, laboratory capacity is needed to provide veterinary surgeons with diagnostic information, to monitor drug sensitivity, and to assess antibiotic residues in animal and human populations.

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I, as Director of Epidemiology, General Directorate of Veterinary Services, noticed the gap between the laboratory results and specialty work with respect to antibiotic prescribing in the West Bank. From this starting point, I designed the study, gathered, and analysed the data, and wrote the report and Abstract.

Conflicts of interest

As Director of Epidemiology, I have a role in disease prevention and control strategies, advising and directing veterinary surgeons to follow best practice in diagnosis (laboratory and field diagnosis), follow-up, tracing and tracking outbreaks, and collaborating with all stakeholders to reduce the effects of animal and zoonotic diseases. The results reported in this Abstract are expected to affect policies and strategies for Palestinian veterinary drug use, prescription, and rules; and to encourage veterinary surgeons, animal breeders, veterinary drug manufacturers, and food safety agencies to set up practical procedures to meet international criteria.

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