Palestinian women's feelings and opinions about vaginal examinations during normal childbirth: an exploratory study

Sahar Hassan, Johanne Sundby, Abdullatif Husseini, Espen Bjertness

Background Vaginal examination is an accepted practice for the assessment of progress during normal childbirth, but its frequent repetition at short intervals has no proven value. It causes pain, discomfort, and anxiety; triggers feelings of fear, shame, guilt, exposure, and powerlessness; and can negatively affect women's satisfaction with childbirth. We report Palestinian women's feelings and opinions about having vaginal examination during normal childbirth.

Methods In this descriptive, qualitative exploratory study, we used a piloted semistructured questionnaire to interview women after they had given birth, but a few hours before they were discharged from a government hospital in the West Bank. We interviewed every other woman during different 2 days every week over 4 months in 2008. The open-ended qualitative questions were typed in Arabic, translated into English, cross checked against the original questions and coded, and the codes were entered and analysed with IBM SPSS Statistics (version 18.0). Permission to undertake the study was obtained from the Palestinian Ministry of Health, Institute of Community and Public Health, Birzeit University, West Bank, and hospital managers. Verbal informed consent was obtained from all women.

Findings Five of 200 eligible women declined and we missed the opportunity to invite 19 women; we interviewed 176 women. The mean age of women was 26·3 years (SD 5·9). 119 (68%) women had more than 9 years of education, 132 (75%) lived in rural areas, 46 (26%) had given birth to only one child, and 11 (6%) had more than seven children. Midwives assisted 138 (78%) women during childbirth. Women described their feelings in 359 responses and their opinions in 279 responses. 142 (81%) women reported pain, 119 (68%) discomfort, and nine (5%) embarrassment; and nine (5%) said that having a vaginal examination was reassuring. "I felt as if I am going to die!", said a 34-year-old para 7, examined three times by three different individuals. Another 24-year-old, primipara, examined eight times by five different individuals, said "Vaginal examination is painful and discomforting. But it was much easier when done by a midwife. Sometimes, I felt that physicians are punishing us for being pregnant and they seem like fighting while doing the vaginal examination. While conducting the vaginal examination, physicians are more aggressive, expose women's bodies too much and in an insensitive way." 166 (94%) women reported that vaginal examination during childbirth was beneficial, 13 (7%) thought that it was not necessary, and 11 (6%) reported that it should be done only when indicated. 18 (10%) women reported that during their vaginal examination, the approaches used by the individuals examining them were insensitive, they were not given sufficient privacy, and their dignity was not respected or they were not treated with humanity. According to one woman, "...there should be more privacy—ie, closing the door, curtains on the window." Another 24-year-old primipara, examined seven times by three different people said, "I knew nothing about vaginal examination. Yesterday was the first time I heard about it. It feels so embarrassing, very discomforting and I do not like to be examined at all."

Interpretation Palestinian women who are pregnant might be subjected to unnecessary pain and discomfort during vaginal examination. Important gaps exist in the practices of health-care providers, including lack of adherence to the ethical and basic standards. Importantly, midwives and physicians need to understand women's feelings and experiences during vaginal examination so as to improve their own practices. They should only do such procedures when necessary and do them with care and respect, without causing unnecessary pain and with minimum discomfort and maximum dignity to the pregnant women.

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SH conceptualised, designed, and piloted the questionnaire, supervised data gathering and entry, cross checked the translation of qualitative questions, and analysed and wrote the draft. All authors contributed to the conceptualisation, analysis, and writing of this Abstract, and have approved the final version.

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

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Forecasting prevalence of type 2 diabetes mellitus in Palestinians to 2030: validation of a predictive model

Niveen M E Abu-Rmeileh, Abdullatif Husseini, Martin O'Flaherty, Azza Shoaibi, Simon Capewell, on behalf of the MedCHAMPS project

Background **Projections of the prevalence of diabetes mellitus are mostly based on changes in population demographics. Inclusion of the time trends of the prevalence of obesity and other risk factors could improve the accuracy of the projections and help with the assessment of policy options for prevention. We therefore report the validation of a mathematical model for predicting the prevalence of diabetes.**

Methods **We created a mathematical model in which time trends in population, obesity, and smoking can be integrated, using a Markov approach, to estimate the future prevalence of diabetes. The parameters for the model were derived from publications, except for the incidence of diabetes, which was estimated with DISMOD II (version 1.01), a computer program that can be used to check the consistency of estimates of incidence, prevalence, duration, and case fatality from the baseline estimate of the prevalence of diabetes. We developed the model for the Palestinian population using data that were available for 2000–10. The model was validated by comparison of the predicted and actual prevalence of diabetes. The baseline point was obtained from the Palestinian Demographic Health Survey 2000. We used the Palestinian Family Health Survey 2004, Palestinian Family Health Survey 2006, and Stepwise Survey 2010 to validate the actual prevalence of diabetes. These are national surveys, each with more than 6000 participants. This study was approved by the Institute of Community and Public Health Ethical Review Committee, West Bank.**

Findings **In 2000, the estimated prevalence of diabetes mellitus was 11·5% (95% CI 9·5–13·5) in Palestinian people aged 25 years or older; by 2010, it had increased to 14·5% (12·2–16·7). In this period, prevalence in men rose from 11·7% (9·7–13·6) to 15·9% (13·4–18·1) and in women from 11·4% (9·3–13·3) to 13·2% (11·1–15·2). In 2004, the prevalence reported in the Palestinian Family Health Survey was 10·6% (8·7–12·5) versus an estimated 11·4% (9·7–13·4); in 2006, these values were 11·8% (9·8–13·8) and 12·3% (10·6–14·6), respectively. Comparison of the estimated and reported prevalence showed a good match for 2004, 2006, and 2010. The forecasts for prevalence of diabetes are 20·8% (18·0–23·2) for 2020 and 23·4% (20·7–25·8) for 2030. If the prevalence of obesity starts to fall by 5%, starting in 2010, a 13% reduction in the prevalence of diabetes could be achieved by 2030.**

Interpretation **The estimates of the prevalence of diabetes in 2000–10 obtained with our model were fairly similar to those reported in independent surveys of prevalence in the occupied Palestinian territory. The burden of diabetes is now a huge public health challenge, and according to our model will increase substantially in the next two decades. Therefore, obesity and other risk factors for diabetes need urgent action to address them.**

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NMEAR and MOF were responsible for adapting the diabetes model to the Palestinian context and drafted the Abstract. The other authors helped in populating the model and contributed to the writing of the Abstract.

Conflicts of interest

We declare that we have no conflicts of interest.

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Outcomes of cardiac surgery in the Gaza Strip, occupied Palestinian territory: a cross-sectional study

Amal Jamee, Yehia Abed

Background In response to the difficulties in access to cardiac surgery that have resulted from the siege on the Gaza Strip, occupied Palestinian territory, facilities for cardiac surgery have been introduced at Al-Shifa Hospital. We investigated the types and short-term outcomes of all surgical operations for coronary, valvular, pericardial, and congenital disease at the hospital.

Methods Data were obtained retrospectively from the medical records of all 216 patients who underwent 261 cardiac operations at Al-Shifa Hospital. We used the number of patients (not operations) as our unit of analysis. We used SPSS (version 17.0) to analyse the data and and χ^2 to assess the relations between the study variables. The study was approved by the Helsinki Committee, Gaza Strip.

Findings 216 patients had cardiac surgery from Jan 1, 2010, to Jan 31, 2011; 147 (68%) were men and 69 (32%) were women. 119 (55%) patients were aged 40–60 years, and 32 (15%) were younger than 40 years. None of the women and 85 (58%) men were smokers. 105 (49%) of 216 individuals had hypertension, 89 (41%) diabetes, and 59 (27%) dyslipidaemia, and 72 (33%) reported a family history of coronary artery disease. Of 154 (71%) patients undergoing isolated coronary surgery, 74 (48%) had a myocardial infarction, 85 (55%) stable chronic angina, and 57 (37%) other symptoms (eg, dyspnoea and atypical chest pain), and 78 (51%) had disease involving at least two vessels and 25 (16%) one vessel (left main stenosis or left main stem stenosis in 20 [13%] cases). The frequency of coronary artery bypass grafting was greater in men than in women (119 [81%] of 147 *vs* 35 [51%] of 69; p<0·0001). 104 (68%) of 154 patients had two coronary grafts. The type of valvular surgery was aortic in five (42%) of 12 men and two (20%) of ten women; double valve surgery was undertaken more often in women (four [40%] *vs* two [17%]). Nine patients had surgery for congenital abnormalities and 15 for pericardial disease; both types of surgeries were more common in women than in men. Overall, 116 (54%) of 216 patients had surgical complications—39 (18%) had bleeding and 32 (15%) infection, reoperation was required in 45 (21%), and 13 (6%) died within 30 days of their operations.

Interpretation The introduction of heart surgery for health care in the Gaza Strip has been associated with short-term mortality rates that are similar to those reported in other countries—eg, 5·3% in a teaching hospital in Iran versus 6% in the Gaza Strip. Attention to basic hygiene during medical and surgical procedures such as sterilisation and use of aseptic techniques will help to reduce the frequency of surgical complications and deaths.

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Contributors
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Sex selection in the Palestinian society: a pilot study

Sarah Memmi

Background The use of reproductive technologies in developing countries has become a focus for research into women's health. However, little is known about how some methods are used and perceived. Since 2009, two modern preconception methods for sex selection have been available in the occupied Palestinian territory (oPt)—sperm selection and preimplantation genetic diagnosis, which cost about US$400 and $1200, respectively. Both methods are now available in the West Bank at four private health (fertility) centres, but are not yet formally regulated. In a society that shows a preference for boys, the description of the emerging social pattern in sex selection is important. The aim of this study was to analyse the attitudes of Palestinian couples and practitioners in relation to preconception sex selection and the circumstances in which the process is implemented.

Methods A qualitative method was used to develop a framework for the estimation of the demand for and availability of sex selection. This framework, consisting of sex preference and demand for sex selection, has been created through 40 in-depth interviews with prospective applicants (men and women) living in the West Bank and East Jerusalem. Data for the availability of sex selection were gathered from three clinics that provided new reproductive technologies and were selected to represent the main providers of sex selection in the oPt. Six in-depth interviews were done with practitioners and the directors of the centres. This study has been approved by the review board of the Paris Descartes University. I obtained verbal informed consent from patients and practitioners for use of their data in the study.

Findings First, the preference for sons, which continues to be a factor affecting Palestinian women's decision making, has been increasingly noticeable with the decline in fertility. Therefore, demand for sex selection is not to achieve family balance but to ensure that the family has at least one son. Second, this prospective demand can now be satisfied with the availability of efficient sex selection techniques, practised and well received by some obstetricians. Paradoxically, they view sex selection as protecting women from social pressure and unwanted pregnancies. Moreover, because no formal regulation exists in the oPt, the doctors can apply their own guidelines, on the basis of the societal norms or their religion, ethics, or personal position. They decide which couples to assist with the reproductive techniques, and thus which couples have the right to select the sex of their unborn child. Third, sex selection is also available in East Jerusalem, but its availability is more restricted than in the other regions of the oPt. Palestinians from East Jerusalem also have the option of moving to other regions to access these services, which raises the question about how to characterise sex selection by region in the oPt.

Interpretation Until now, the risks of a demographic sex imbalance in the oPt have been balanced by the fairly high fertility and the prohibition of sex selective abortion and other forms of regulation. Sex selection will lead to important sex inequality in Palestinian society. The use of technologies for sex selection raises questions about their ethical, social, and cultural, specifically sex, effects on women's health.

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Development assistance for health to the occupied Palestinian territory from 1990 to 2008: a database analysis

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See Online for appendix

Background Since the Oslo Accords in 1993, there has been a gradual increase, becoming steep from 2005, in development assistance to the occupied Palestinian territory (oPt). In this study, I aimed to provide a systematic assessment of the scale, focus, and trends in regional and global development assistance for health (DAH) to the oPt from 1990 to 2008.

Methods Using the DAH country and regional recipient database of the Institute for Health Metrics and Evaluation, Seattle, WA, USA, published reports, and the database for creditor reporting system of the Organisation for Economic Co-operation and Development, a database was created for the DAH to the oPt and other Arab countries. All disbursements are reported in 2008 US$.

Findings DAH to the oPt increased from $74 000 in 1990 to $62 million in 2008. The total DAH to the oPt during these years was $524 million, representing 5·3% of the total development assistance to the oPt. The DAH per person to the oPt is the highest in the Arab countries, with a mean $7·94 per year since 1990, and peaking at $16·35 in 2004 (appendix). In the oPt, 92·5% of the total DAH to the oPt from 1990 to 2008 was not earmarked for specific diseases. The USA is the largest donor of DAH to the oPt, contributing 36·9% of $524 million total DAH from 1990 to 2008. The geographic distribution of aid within the oPt is not yet known, though preliminary evidence suggests a higher flow of aid per person to the West Bank than to the Gaza Strip. These amounts do not include the UN Relief and Works Agency for Palestine Refugees in the Near East's health spending in the oPt because yearly health spending within the oPt is not reported, though is roughly estimated to be $9·5 per person since 2002 on the basis of previous reports (appendix). The amounts reported here do not include general budget support to the Palestinian Authority of about $400 million from 2001 to 2005, rising rapidly to $1·6 billion by 2008. The Palestinian Authority claims to spend 10% of the budget support on health ($38 per person in 2008), but because these amounts could not be verified they have not been included in this analysis.

Interpretation Although the oPt has received more DAH per person since 1990 than has any of the Arab countries, we do not know the effect of DAH on health outcomes in the oPt. Total official development assistance per person and DAH per person have continued to increase, led by contributions from the USA. The reporting of contributions of DAH to the oPt by Muslim and Arab countries through formal international channels have been neither meaningful nor consistent. Measurement of the effect and distribution of DAH to the oPt could be improved through better adherence to global guidelines for monitoring and accountability of aid, including the Paris Declaration.

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I declare that I have no conflicts of interest.

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Positive emotions and life satisfaction in Palestinian children growing up amid political and military violence: a pilot study

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Background Exposure to war has mostly negative psychological effects on children, according to the results of several studies undertaken in the occupied Palestinian territory (oPt). Political and military violence has been sustained in the oPt since the intifada (uprising) of 2000; according to the results of a study in the West Bank, the frequency of mild post-traumatic stress disorder was 73% (41% medium and severe) of 174 people. Additionally, direct and indirect exposure to trauma is associated with disruption of sleep and concentration, somatic symptom disorders, impulsive behaviours, and depression. Data for the resilience of Palestinian children or how they cope positively with trauma have been reported in few studies; in a study in the Gaza Strip, 21% of 640 children were judged resilient. We therefore assessed wellbeing in Palestinian children exposed to war in the oPt.

Methods In this pilot study, wellbeing was assessed in 74 Palestinian children (aged 7–15 years, 43 boys and 31 girls) living in a refugee camp in Tulkarm, West Bank, with questionnaires administered during a summer camp run by a non-governmental organisation in 2010. Children were selected after meetings with their families and in accord with the recommendations of local institutions that had been in charge of the children during the school year. The children answered an open question "What makes you feel good?" and completed three self-report assessments. Positive and negative affect schedule-children (PANAS-C) was used to assess the intensity of positive and negative emotions; multidimensional students' life satisfaction scale for schoolchildren's contentedness with five domains (self, family, friends, school, and environment); and faces scale for self-perceived happiness. The qualitative data were analysed for thematic content, and self-report measures were analysed quantitatively (correlation and linear regression). The research was undertaken in accord with the ethics committee guidelines of the University of Milano-Bicocca, Milan, Italy. Parents provided verbal informed consent; the children could participate or withdraw from the study of their own volition and decline to answer any of the questions.

Findings The children had healthy measurements for wellbeing in terms of positive emotions and life satisfaction, with 64 (86%) of 74 obtaining almost maximum scores for happiness. Personal factors (Spearman's rank correlation coefficient; p=0) and social factors—family (p=0·014) and friends (p=0·006)—were positively correlated with life satisfaction. The linear regression analyses showed that positive emotions significantly contributed to the contentedness of the children (p=0·015). No significant differences were noted in wellbeing as a function of sex. However, girls had greater ability than did boys in benefiting from both social relationships and personal resources. Girls had significantly greater satisfaction with both their friends and their lives overall, particularly with respect to family, educational, religious, and social dimensions. Significant differences were noted with respect to age in the PANAS-C scores for overall negative affect (Student's *t* test for two independent samples; p=0·1) and for the anxiety or fear subscale (p=0·024 or p=0·094, respectively). Specifically, older children (aged 11–15 years) obtained higher scores on both the negative emotion and anxiety or fear scales. Younger children (aged 7–10 years) had slightly but significantly higher scores for self-perceived happiness than did older children (p=0·043).

Interpretation Our results, although exploratory, provide valuable guidance for clinical work, particularly with respect to the importance of social networks and the effects that they have on positive emotions in Palestinian children and adolescents. Clinical interventions should be targeted at strengthening aspects of positive functioning, rather than at correcting behaviours or cognitive and emotional states that are unequivocally thought to be maladaptive.

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Contributors
GV and MS were responsible for the research design, data analysis, and writing of this study; MN gathered the data and drafted the first version of the Abstract.

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

Acknowledgments
We thank the Palestinian children who we hope will continue to work with us to build a better future.

Contraceptive use by Palestinian-refugee mothers of children aged 0–3 years attending the UN Relief and Works Agency for Palestine Refugees in the Near East's maternal and child health clinics in the occupied Palestinian territory (West Bank and Gaza Strip), Lebanon, Jordan, and Syria: a follow-up study

Haifa Madi

Background In 1994, the UN Relief and Works Agency for Palestine Refugees in the Near East (UNRWA) introduced family planning services as an integral part of its expanded programme for maternal and child health. The main objective in this report of the 2005 follow-up was to assess contraceptive use 10 years after the baseline study in 1995 and at follow-up in 2000 to ascertain the progress in the achievement of the programme's objectives and to identify future needs of the mothers and improvements for the programme.

Methods The total sample was 10 890 women who attended UNRWA's clinics for maternal and child health with their children (aged 0–3 years) whose births had been registered at the clinic. Trained senior staff nurses and senior nurses completed a standard questionnaire during interviews with the mothers. Data were analysed with EpiInfo (version 6.0). Informed verbal consent was obtained from the women.

Findings The mean number of pregnancies per woman dropped from 4·39 in 1995 to 4·14 in 2000 and 3·90 in 2005. The mean number of children alive per mother fell from 3·85 in 1995 to 3·47 in 2000 and 3·26 in 2005. The mean birth interval rose from 29·8 months in 1995 to 34·3 months in 2000 and 37·9 months in 2005. Overall, 2581 (31%) of 8309 women in 1995, 2777 (50%) of 5565 in 2000, and 6033 (55%) of 10 890 in 2005 used modern contraceptives: an increase of 24·3% from 1995 to 2005. The rate of contraceptive use was highest in women with four to six children, whereas in the baseline study the highest rate was in women with more than ten children. The total fertility rate in the target population since the introduction of the family planning programme dropped from 4·7 in 1995 to 3·5 in 2000 and 3·2 in 2005.

Interpretation The rate of contraceptive use has almost doubled during the 10 years since the baseline study. The steady increase in the use of modern contraceptives indicates a change in behaviour among Palestinian refugees to have smaller families.

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Palestinian health-related publications in international medical journals: an analysis of the trend

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Background The health system in the occupied Palestinian territory (oPt) was established as a result of the Oslo Accords in 1993. Since then it has been supported by many donor countries, UN agencies, and international non-governmental organisations. Higher education for Palestinian students in the health specialty has been supported, especially by Oslo University, and health research, including research to assess the health system, has been encouraged. References cited in reviews indicate an increase in the reports in international medical journals about issues that affect the health of the Palestinian people since the signing of the accord. However, the trend in this increase has not been studied. The aim of this study was to review trends in the reports published about health-related issues in Palestinian people between 1940 and 2011.

Methods We defined a Palestinian health-related report as one that includes "Palestinian" as a keyword in medical journals. We identified such articles using the Medline database, accessed through PubMed. We gathered the yearly numbers of the publications and then calculated the mean and SD of reports for 1940–66; 1967–86 (third Arab-Israeli war in 1967); 1987–92 (first Palestinian intifada [uprising] in 1987); 1993–99 (Oslo Accords in 1993); 2000–08 (second intifada in 2000); and 2009–11 (*The Lancet* Series about health in the oPt in 2009). We also recorded the number of reports about Palestinian health-related issues from 1993 to 2011, and did a linear regression analysis to identify the time trend during this period. 95% CIs were used to indicate significance.

Findings The mean number of Palestinian health-related reports per year was 0·3 (SD 0·6, range 0–2) during 1940–66, 0·9 (1·0, 0–3) in 1967–86, and 5·3 (3·9, 1–13) in 1987–92. After the signing of the Oslo Accords in 1993, the mean increased to 15·9 (9·3, 2–30) in 1993–99, and was 50·7 (15·0, 33–72) in 2000–08. When *The Lancet* published the series about health in the oPt (11 reports), the number of reports rose to 92 in 2009 and then fell to 79 in 2010 and 75 in 2011. The trend in the yearly numbers of reports about Palestinian health-related issues between 1993 and 2011 was significantly increased (slope of the time trend curve 4·6, 95% CI 3·8–5·3).

Interpretation The number of reports about Palestinian health-related issues increased rapidly after the signing of the Oslo Accords. The highest number of reports was published in 2009, and *The Lancet* Series was a substantial component. Repeats of the opportunity provided by *The Lancet* seem likely to encourage research and publication by individuals who have not traditionally had many chances to compete internationally. In this study, we have focused only on the crude numbers of reports. Additional research will help to provide details about the overall publication trend and to assess the focus of the study (health-related issues and target areas and populations) and research institutions involved.

Funding None.

Contributors
RF designed the study. RF and UH analysed and interpreted the data. RF wrote the Abstract with contributions from UH.

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

Food insecurity among Palestinian refugees living in Lebanon: a household survey

Hala Ghattas, Karin Seyfert, Nadine R Sahyoun

Background Although the UN Relief and Works Agency for Palestine Refugees in the Near East (UNRWA) has been providing food aid to the most vulnerable Palestinian families since 1978, Palestinian refugees in Lebanon are still prone to food insecurity because of their fragile livelihoods and high rates of poverty. For refugees living in Lebanon, food security has only been assessed in studies undertaken after the various conflicts, and the focus was on food availability in markets. Food insecurity within households has not been assessed directly. We aimed to estimate the prevalence of food insecurity and associated factors in the households of Palestinian refugees in Lebanon.

Methods We undertook a socioeconomic survey of 2575 households of Palestinian refugees during July and August, 2010. A multistage cluster random sampling approach was used to select Palestinian households living in camps and gatherings in Lebanon. We adapted the survey module used to assess food security in the USA to the context of Palestinian refugees living in Lebanon; the module was validated with Rasch modelling. We constructed a four-item scale to classify households according to their severity of food insecurity. The questionnaire was also used to obtain information about socioeconomic, demographic, and health variables, and frequency of food consumption in households. Reported proportions and percentages are population estimates calculated with inverse probability weighting to take account of the differences in sampling proportions, selection probability, and response rates. We used Stata (version 12), with incorporation of stratification, sampling stages, and weighting information, for both bivariate (adjusted Wald to assess difference in means and χ^2 to test associations) and multivariate analyses (logistic regression models) of the survey data. This study was approved by the Institutional Review Board of the American University of Beirut, Beirut, Lebanon. Verbal informed consent was obtained from a household proxy respondent to whom the questionnaire was administered.

Findings 2501 (97%) of 2575 eligible households of Palestinian refugees provided informed consent and completed the questionnaire. 63% (95% CI 60–65) of households reported some food insecurity and 13% (11–14) severe food insecurity. 59% (56–62) of households lived below the national poverty line—ie, on less than US$6 per person per day. The prevalence of severe food insecurity was 15% (14–18) in these households. 20% (15–27) of households with the head of the family in an elementary occupation (according to the International Standard Classification of Occupations, such as manual labourer, cleaner, and porter) reported severe food insecurity compared with 2% (2–7) in which the head of the household had a professional occupation (odds ratio 11·2, 95% CI 3·2–39·8; p=0·0001). 14% (13–16) of households in which the head had attended school for less than 10 years reported severe food insecurity compared with 8% (6–12) in which the head had attended school for 10 years or more (2·0, 1·3–2·5; p=0·004). 16% (13–21) of households with women as the head of the family had severe food insecurity compared with 11% (10–13) of those with men as the head (1·5, 1·1–2·1; p=0·0058). Households that were severely food insecure were more likely than those that were not to have at least one household member with a chronic disease (83% [78–87] *vs* 75% [70–79]; 1·6, 1·2–2·3; p=0·0033), disability (22% [17–30] *vs* 16% [14–19]; 1·5, 1·0–2·2; p=0·0439), and recent acute illness (66% [61–71] *vs* 57% [53–60]; 1·5, 1·1–2·0; p=0·0071). Respondents from households with severe food insecurity had lower scores on the five-item mental health inventory (p<0·0001). 28% (21–37) of households with severe food insecurity ate fruit and 48% (42–54) fresh meat products less than once a week compared with 9% (8–11; 0·3, 0·2–0·4; p<0·0001) and 16% (14–19; 0·2, 0·2–0·3; p<0·0001), respectively, of those that were not severely food insecure.

Interpretation Because food insecurity is common in households of Palestinian refugees in Lebanon and is related to low household income, female sex, and low socioeconomic group of the head of the family, food aid programmes need to be improved to reduce household food insecurity. The intake of fresh foods, particularly fruit and meat, needs to be increased to avoid micronutrient deficiencies. Special attention should be given to households of low socioeconomic status.

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HG and NRS conceived the idea for the study. KS did the sampling, supervised data gathering, and analysed the data. All authors were involved in study design, data interpretation, and writing of the Abstract and have approved the final version.

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

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Forecasting prevalence of type 2 diabetes mellitus in Palestinians to 2030: validation of a predictive model

Niveen M E Abu-Rmeileh, Abdullatif Husseini, Martin O'Flaherty, Azza Shoaibi, Simon Capewell, on behalf of the MedCHAMPS project

Background **Projections of the prevalence of diabetes mellitus are mostly based on changes in population demographics. Inclusion of the time trends of the prevalence of obesity and other risk factors could improve the accuracy of the projections and help with the assessment of policy options for prevention. We therefore report the validation of a mathematical model for predicting the prevalence of diabetes.**

Methods **We created a mathematical model in which time trends in population, obesity, and smoking can be integrated, using a Markov approach, to estimate the future prevalence of diabetes. The parameters for the model were derived from publications, except for the incidence of diabetes, which was estimated with DISMOD II (version 1.01), a computer program that can be used to check the consistency of estimates of incidence, prevalence, duration, and case fatality from the baseline estimate of the prevalence of diabetes. We developed the model for the Palestinian population using data that were available for 2000–10. The model was validated by comparison of the predicted and actual prevalence of diabetes. The baseline point was obtained from the Palestinian Demographic Health Survey 2000. We used the Palestinian Family Health Survey 2004, Palestinian Family Health Survey 2006, and Stepwise Survey 2010 to validate the actual prevalence of diabetes. These are national surveys, each with more than 6000 participants. This study was approved by the Institute of Community and Public Health Ethical Review Committee, West Bank.**

Findings **In 2000, the estimated prevalence of diabetes mellitus was 11·5% (95% CI 9·5–13·5) in Palestinian people aged 25 years or older; by 2010, it had increased to 14·5% (12·2–16·7). In this period, prevalence in men rose from 11·7% (9·7–13·6) to 15·9% (13·4–18·1) and in women from 11·4% (9·3–13·3) to 13·2% (11·1–15·2). In 2004, the prevalence reported in the Palestinian Family Health Survey was 10·6% (8·7–12·5) versus an estimated 11·4% (9·7–13·4); in 2006, these values were 11·8% (9·8–13·8) and 12·3% (10·6–14·6), respectively. Comparison of the estimated and reported prevalence showed a good match for 2004, 2006, and 2010. The forecasts for prevalence of diabetes are 20·8% (18·0–23·2) for 2020 and 23·4% (20·7–25·8) for 2030. If the prevalence of obesity starts to fall by 5%, starting in 2010, a 13% reduction in the prevalence of diabetes could be achieved by 2030.**

Interpretation **The estimates of the prevalence of diabetes in 2000–10 obtained with our model were fairly similar to those reported in independent surveys of prevalence in the occupied Palestinian territory. The burden of diabetes is now a huge public health challenge, and according to our model will increase substantially in the next two decades. Therefore, obesity and other risk factors for diabetes need urgent action to address them.**

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Contributors

NMEAR and MOF were responsible for adapting the diabetes model to the Palestinian context and drafted the Abstract. The other authors helped in populating the model and contributed to the writing of the Abstract.

Conflicts of interest

We declare that we have no conflicts of interest.

Acknowledgments

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Health and living conditions of Palestinian refugees residing in camps and gatherings in Lebanon: a cross-sectional survey

Rima R Habib, Karin Seyfert, Safa Hojeij

Background Palestinian refugees have lived in camps and gatherings in Lebanon for more than 60 years. They are socially, politically, and economically disadvantaged as a result of discriminatory laws and decades of marginalisation, as shown by the absence of property rights and being banned from more than 30 occupations. In Palestinian refugee camps and gatherings, the provision of housing, water, electricity, refuse, and other services are inadequate and contribute to poor health. The association between physical and mental health and living conditions of Palestinian refugees in Lebanon was assessed.

Methods A cross-sectional survey of a representative sample of Palestinian refugees living in all the camps and gatherings in Lebanon was done with multistage cluster sampling during July and August, 2010. Within clusters, households were selected with a random-walk algorithm from a sampling frame provided by the UN Relief and Works Agency for Palestine Refugees in the Near East (UNRWA). Trained Palestinian social workers interviewed a proxy respondent (generally the female homemaker) from each household face to face using a structured questionnaire. Respondents answered questions about the health and sociodemographics of all household members, housing conditions, and household expenditures and assets (including the ownership of household appliances). The questionnaire included housing indicators for water leakage and type of construction materials. Health was assessed with household reports of chronic and acute illnesses, and mental health of the respondent was assessed with the five-item mental health inventory. Logistic regression models were used to analyse the association between chronic or mental health problems and housing conditions; other covariates were controlled for. This study was approved by the Institutional Review Board of the American University of Beirut. Informed oral consent was obtained from proxy respondents.

Findings A total of 2575 households were randomly selected from a sampling frame and 2501 (97%) responded to the survey. An estimated 31% of 11 092 individuals surveyed had had chronic illnesses and 24% had had acute illnesses in the 6 months before the survey. 82% of 2501 proxy respondents were women; 52% of respondents reported chronic illness, 28% reported acute illness, and 55% were psychologically distressed. 42% of dwellings had water leaking from the roof or walls and 8% were composed of building materials that are dangerous to health (eg, asbestos). Multivariate analysis of predictors of chronic illness showed that the prevalence of chronic illnesses was significantly positively correlated with water leakage (odds ratio 1·24; 95% CI 1·04–1·48) and negatively correlated with household assets (0·85; 0·79–0·91), supporting the link between poverty and health in these communities. Respondents with poor mental health were more likely than were those with good mental health to live in crowded households (1·46; 1·27–1·67), reside in homes with water leakage (1·36; 1·14–1·62), report having chronic (1·98; 1·55–2·48) and acute illnesses (1·31; 1·02–1·68), and have fewer household assets (0·88; 0·84–0·94).

Interpretation Palestinian refugees living in Lebanon struggle with poor health, which is exacerbated by substandard housing and other forms of social and economic marginalisation. Initiatives to improve their housing and economic conditions are needed. Additionally, the increased efforts to assess the social roots of poor physical and mental health and develop appropriate interventions are timely.

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Contributors
RRH conceptualised ideas and prepared the first draft. KS supervised the data gathering. SH did the literature review. All authors interpreted the findings, and reviewed and edited drafts of the Abstract.

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

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Maternal near miss in four governmental hospitals in the West Bank, occupied Palestinian territory, in 2010: a retrospective, facility-based survey

Asma Mohammad Imam, Salwa Najjab, Enas Dhaher, Waleed Barghouti, Souzan Ahmad Abdo, Ali Nashaat Shaar, Said Sarahneh, Stephanie M Hansel

Background In the past few years maternal near miss (MNM) has gained attention as an important indicator of the quality of obstetric care. Data for MNM in the West Bank, occupied Palestinian territory (oPt), have not been reported. Our aim was therefore to identify the frequency of MNM in four Ministry of Health maternity hospitals in the West Bank and review compliance with national protocols in case management.

Methods We undertook a retrospective, descriptive, facility-based survey to identify maternal complications and suspected MNM cases in a total of 18 849 women admitted during 2010 to four selected Ministry of Health referral hospitals covering the north, middle, and south districts (main areas) of the West Bank. A random, stratified sample of cases was selected from the hospitals according to an allocation sequence generated with WinPepi (version 11.15). The ratio of case selection was proportionate to the number of cases at each hospital. 198 (77 pre-eclampsia, 39 post-partum haemorrhage, 64 anti-partum haemorrhage, and 18 anaemia) of a total 403 suspected cases of MNM (157 pre-eclampsia, 82 post-partum haemorrhage, 130 anti-partum haemorrhage, and 34 anaemia) were selected to identify those meeting WHO's diagnostic criteria. We undertook in-depth interviews with seven MNM cases admitted to intensive-care units (ICUs) according to an interview guide (of open-ended questions developed by the researchers and technical committee, and direct questions adapted from a questionnaire used in Brazil about severe maternal morbidity), and with 46 health-care professionals working in the maternity wards for the knowledge, attitudes, and practices (KAP) survey. In structured interviews of heads of maternity departments and other managers, we assessed the quality of maternal facilities. Because this study was hospital-based, post-partum data after discharge were excluded. The study was reviewed for ethical issues and approved by the UN Population Fund's office for the West Bank and Gaza Strip, and the Palestinian Ministry of Health and Palestinian Society of Obstetrics and Gynaecology, West Bank. We obtained written informed consent from the seven MNM cases. We used descriptive statistics (frequencies, mean, SD) to present the data and χ^2 analysis (SPSS, version 13.0) to test the relation between health providers answering the knowledge questions and other factors in the KAP survey. For the in-depth interviews, the data were transcribed verbatim to describe women's responses to the open-ended questions.

Findings In 2010, in the four hospitals, 403 (2%) of 18 849 births were suspected cases of MNM according to disease-specific criteria. 179 selected cases were analysed; according to WHO's definition, the types of MNM were 75 (42%) pre-eclampsia, 54 (30%) ante-partum haemorrhage, 33 (18%) post-partum haemorrhage, 11 (6%) anaemia, and six (3%) ante-partum and post-partum haemorrhage. Of 179 women included in this study, 37 (21%) were admitted to ICUs. The 39 cases of post-partum haemorrhage were managed with oxytocin or methylergometrine (33 [85%]) and misoprostol (27 [69%]). 31 (79%) women had uterine massage and cervical and vaginal checks. Blood transfusion was administered in 16 (41%) cases, and five (13%) had hysterectomies and internal iliac artery ligation. Moreover, the management of complications showed suboptimum compliance with the Palestinian Ministry of Health's National Obstetrical Emergencies Guidelines and Protocols (November, 2008). In the KAP survey, 31 (67%) of 46 health staff who responded correctly answered questions about case management of post-partum haemorrhage; 12 (26%) correctly answered questions about the management of pre-eclamptic toxaemia; and 19 (41%) were able to define the MNM classification according to WHO's criteria. The results of our facility audit showed that the equipment and machines used in the four hospitals were adequate; however, the maintenance of machines was difficult because there are no programmes for all governmental hospitals and no provision of training and monitoring of all staff.

Interpretation We believe that the frequency of MNM in the oPt is higher than that noted in this study because of poor reporting and documentation of cases in hospitals. Therefore, a system of continuous education consisting of a thorough assessment of training needs and a clearly defined training plan, and ethical or legal responsibilities pertaining to proper documentation and management of cases are needed.

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Contributors
AMI was the main researcher for the study. SN was the technical committee lead. ED was the researcher for the KAP portion of the study. WB reviewed case files and was a member of the technical committee. SMH wrote the Abstract and provided research support. SAA, ANS, and SS were members of the technical committee.

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

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Barriers to the access to health services in the occupied Palestinian territory: a cohort study

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Background Access to health care is a fundamental human right and inadequate access can compromise health. Israel's military occupation of the West Bank and Gaza Strip and annexation of East Jerusalem, occupied Palestinian territory (oPt), in contravention of international law restrict the movement of Palestinians within and between these regions. Patients' access to specialised health care is hindered by difficulties in obtaining the permits required by the Israeli authorities and by restrictions on the modes and routes of travel, with increased cost, time, and difficulty caused by the blockade of the Gaza Strip, presence of Israeli settlements in the oPt, and separation wall around Jerusalem. We assessed the extent and effect of these barriers for Palestinian patients needing health care and for Palestinian service providers who encounter difficulties in travelling to work.

Methods We used quantitative and qualitative approaches to describe and analyse the experiences of Palestinians in the West Bank and Gaza Strip who applied for permits from the Israeli authorities during 2011, either to access health care or for travel to work in Palestinian hospitals in East Jerusalem. Data for patient referrals were obtained from the Palestinian Ministry of Health; data for permit applications and responses were obtained from the Palestinian General Authority of Civil Affairs, West Bank and Gaza Strip, and hospitals in East Jerusalem. Permit data for the Gaza Strip were analysed by application response (classified as approved, denied, or delayed [appointment date]), age, sex, and residence; disaggregated data were not available for the West Bank. Data for ambulance access were obtained from the Palestinian Red Crescent Society, West Bank, and the Palestinian General Authority of Civil Affairs, Gaza Strip. Data for permit applications submitted between Jan 1 to March 31, 2012, at three district liaison offices, West Bank, with high denial rates were analysed to ascertain reasons for denial. We interviewed families of patients who died after applying for a permit but before they had access to health care. Data were limited by the absence of detailed information about patients on non-ministry referrals and permit applications, and the under-reporting of deaths and interviews of patients called for by the Israeli security authorities. Data were analysed with Microsoft Excel (versions 2007 and 2010). Verbal approval for use of data was obtained from the Palestinian Ministry of Health and General Authority of Civil Affairs. Patients and families gave verbal consent for interviews. We did not use patients' personal information.

Findings In 2011, 33 285 patients (23 877 from West Bank and 9408 from Gaza Strip) referred by the Ministry of Health required Israeli permits for access to hospitals. Of these referrals, 24 168 (73%) were within the oPt, and 4764 (14%) to Israel and 4350 (13%) to Jordan. 175 228 patients and their companions in the West Bank applied for permits for health-care access in 2011; of these, 32 678 (19%; range 8–30% in 16 district offices) had their access permits denied or delayed. Data for the first quarter of 2012 from three district offices showed the most frequent reason given for denying patients was security (680 [42%] of 1622 denials). No criteria could be identified for denials on the basis of security. For the 1053 staff who needed permits to travel to work in hospitals in East Jerusalem, 986 staff received permits for 6 months, 46 for 3 months, and 21 were denied permits. All permits were restricted by mode and route of entrance to East Jerusalem. Only on 49 (5%) of 1074 occasions were ambulances permitted to enter East Jerusalem. In 2011, 1082 (10%) of 10 560 applicants in the Gaza Strip had their access permits denied or delayed, with no reason given, and 197 (2%) were called for security interview. Patients aged 18–40 years had the highest rate of denied or delayed permits. Tracer interviews with Gazan families of patients who had their permits denied or delayed showed that six patients died while waiting for the permits.

Interpretation Our data provide quantification of the extent of restricted access to health care for Palestinians in the West Bank and Gaza Strip and show that procedures for obtaining permits required by the Israeli authorities cause substantial difficulties in the access to hospital care for patients. Further study is needed to ascertain how and to what extent these difficulties in access have an effect on the health status and wellbeing of the patients.

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Contributors

AV was responsible for the study design, data analysis and interpretation, and writing and review of the Abstract. AS was responsible for the data gathering, analysis, and interpretation, and case work for the Gaza Strip. JO was responsible for the data gathering, analysis, and interpretation for the West Bank. TA contributed to data gathering and case work for the West Bank. ML contributed to data gathering and analysis, and case work for the Gaza Strip. TL was responsible for the review of the overall quality of the study and Abstract.

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

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Incidence of cleft lip and palate in the occupied Palestinian territory: a retrospective study

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Background **Orofacial clefts are the most common craniofacial anomaly in newborn babies. The incidence varies in different ethnic populations and is presumed to be highest in developing countries. In the Middle East, the reported incidence per 1000 livebirths per year was from 0·3 to 2·19 per year and is generally thought to be similar to rates reported in white populations. In Israel and Jordan, the incidence is recorded as 1·39 per 1000 livebirths per year. The incidence of oral clefts in Palestinians living in the occupied Palestinian territory (oPt) has not been reported so far and might not be similar to that in stable populations. We therefore investigated the incidence of these anomalies in the oPt.**

Methods **We inspected the records of all newborn babies delivered at the Makassed Maternity Hospital, East Jerusalem, oPt, between Jan 1, 1986, and Dec 12, 1995. The catchment area of the hospital included people residing inside and outside East Jerusalem. Data were gathered by AD and interpreted by the other investigators. Incidences were reported as the number of newborn babies with orofacial clefts per 1000 livebirths per year.**

Findings **Between Jan 1, 1986, and Dec 12, 1995, 33 239 livebirths were recorded at the hospital. 35 infants had orofacial clefts, yielding an incidence of 1·05 per 1000 livebirths per year: six infants (0·18 per 1000 livebirths) had isolated cleft lip, 14 (0·421 per 1000 livebirths) cleft lip and palate, five had other anomalies, and ten had other non-specified orofacial clefts.**

Interpretation **On the basis of this small dataset from one tertiary referral hospital, we conclude that the incidence of orofacial clefts in Palestinians living in the oPt is similar to that reported in neighbouring countries. However, these results need to be confirmed in large broad studies with data from the national birth registries.**

Funding **None.**

Contributors
HTB, EAKH, AD, and JAvA did the data analysis and writing of the Abstract. AD gathered the data.

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

Monitoring of diabetes and hypertension services provided by the UN Relief and Works Agency for Palestine Refugees in the Near East

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Background The UN Relief and Works Agency for Palestine Refugees in the Near East (UNRWA) is the main provider of health services to 5·1 million Palestinian refugees in Jordan, Lebanon, Syria, and the occupied Palestinian territory (West Bank and Gaza Strip). In 1992, UNRWA planned to incorporate services for the treatment of individuals with diabetes and hypertension into its primary health-care programme; integration of the services was completed in 1994. The number of people with diabetes or hypertension attending UNRWA's health centres increased from 14 500 in 1992 to 199 400 in 2010. More women than men attend UNRWA's clinics, not because of reasons related to their diseases but because these clinics are open during the morning (0730 h to 1400 h) when most men are at work. 61% of 199 400 people attending the clinics were women and 39% were men, and 91% were older than 40 years. In 2010, the prevalence of diabetes in the population older than 40 years was 11% and of hypertension was 16% of 1 506 000 individuals. The aim in this study was to assess the control status and prevalence of complications and associated risk factors in patients with diabetes and hypertension attending UNRWA's clinics.

Methods All 199 400 registered refugees with diabetes or hypertension in all UNRWA's clinics were eligible for participation in the study. According to expert opinion, the predefined sample size was 19 400 patients and 10% of patients at each health centre were selected. Every tenth patient's file in the clinic's standardised record keeping system was selected for inclusion in the study to achieve the 10% per health centre and thus 10% overall. At the end of 2010, field data were compiled for all patients who had been registered for at least 1 year, and for those whose files showed their blood pressure and 2 h post-prandial blood glucose (PPG) concentration had been measured at least three times during 2010 and that they had a control status according to UNRWA's criteria (guidelines as per WHO's recommendation). Late (irreversible) complications (namely, myocardial infarction, cerebral stroke, end-stage renal failure, blindness, or above-ankle amputation of at least one side) were included in the assessment. The data were analysed with the Management Health Information System (version 3.08) at UNRWA's headquarters in Amman, Jordan, and Microsoft Excel 2007. This study was reviewed and approved by the ethical committee of UNRWA's Health Department. Participants provided verbal informed consent.

Findings According to UNRWA's criteria, a patient's diabetes is controlled if two of three readings for post-prandial glucose concentration are less than or equal to 10 mmol/L, and hypertension is controlled if two of three readings are less than 140/90 mm Hg; for patients with both diseases, both criteria need to be met during 1 calendar year. Criteria for control of diabetes were met in 1642 (48%) of 3400 patients with diabetes, 5432 (60%) of 9100 with hypertension, and 2746 (40%) of 6900 individuals with both diabetes and hypertension. Overall, 2445 (13%) of 19 400 patients had late complications: 947 (5%) myocardial infarction, 621 (3%) congestive heart failure, 702 (4%) stroke, 68 (<1%) end-stage renal failure, 61 (<1%) blindness, and 46 (<1%) amputation above the ankle. 11 620 (60%) of 19 400 patients were obese (body-mass index ≥30 kg/m²), 5917 (31%) had a serum cholesterol concentration greater than 5·17 mmol/L, and 3317 (17%) were smokers.

Interpretation The frequency of risk factors and late complications in Palestinian refugees with diabetes and hypertension are a cause for concern. Monitoring of these patients on a yearly basis would improve their management. Also, the quality of monitoring could be improved with the measurement of glycated haemoglobin A_{1c}, increased staff capacity at UNRWA, and provision of drugs that improve the control status of diabetes or hypertension and reduce the rates of complications in patients. Furthermore, research for evidence-based information and subsequent actions with respect to non-communicable diseases need to be increased by UNRWA.

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

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Association of maternal psychosocial, economic, and political stressors with low birthweight in the Gaza Strip, occupied Palestinian territory, 2006: a case-control study

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Background Low birthweight (<2·5 kg) remains a challenging public health issue despite decades of research and efforts to prevent it. More than 20 million infants per year worldwide, 96% in developing countries, are born with low birthweight. The birthweight of infants is a direct indicator of socioeconomic conditions and an indirect measure of the health of the mother and child. Psychosocial risk factors affect health indirectly through health behaviours and directly through psycho-neuro-endocrine-immune pathways. The main aim in this study was to assess the association of low birthweight with a range of psychosocial, economic, and political factors in the context of the socioeconomic and political situation in the Gaza Strip, occupied Palestinian territory, in January, 2006.

Methods We undertook a matched case-control (1:1 ratio) study at two hospitals with obstetric services in the Gaza Strip. 446 women (223 cases and 223 controls) were selected from Al-Tahrier Hospital from May 1 to June 30, 2007, and from Al-Shifa Medical Centre from July 1 to Aug 31, 2007. Women were eligible if they were residing in the Gaza Strip for at least 1 year before delivery; delivered a live singleton infant; and were admitted for labour at Al-Tahrier Hospital or Al-Shifa Medical Centre during the study period. Cases were all the women who delivered live singleton infants (weight <2500 g) in the obstetrics departments of the two hospitals. Matched controls were mothers who delivered single live newborn babies (≥2500 g). Controls were selected during the first 24 h after their respective cases were identified. In the univariate analysis, we computed unadjusted matched odds ratios (mOR) and the 95% CIs with conditional logistic regression. Multivariate analysis of the data was completed in two integrated steps. In model 1, we analysed psychosocial, economic, and political predictors that remained after stepwise backward selection. In model 2, we analysed the significant variables from model 1 and other principal confounding factors. The confounding variables were geodemographic characteristics: parents' education, occupation, residence, and consanguinity, and maternal body-mass index. The study protocol was approved by the Ministry of Health and authorised by the Helsinki Committee, Gaza Strip. All participants provided written informed consent.

Findings The results obtained with model 2 showed that the following variables in the mother were significantly associated with low birthweight after adjustment for confounders: unsafe living conditions (mOR 3·0; 95% CI 1·6–5·8), psychological stress (2·3; 1·2–4·4), no household salary (5·1; 2·4–10·8), low household income (2·7; 1·2–6·2), husband who was unemployed (2·8; 1·4–5·6), food shortage (2·5; 1·0–6·4), and anxiety after conflict with Israel (2·8; 1·5–5·0).

Interpretation Maternal exposure to several psychosocial, economic, and political factors were independently associated with low birthweight. Many of these risk factors were thought to be preventable through the behavioural changes and improvement in the quality of life of the mother. The results of this study emphasise the need for health education strategies for the alleviation of stressors in addition to governmental action to improve socioeconomic conditions in the occupied Palestinian territory.

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Contributors
AA and AR contributed to the study design. AA wrote the Abstract and supervised data gathering, entry, analysis, and interpretation. AR assisted with data gathering, writing, literature review, and editing of the Abstract.

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

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Tele-education for teaching of evidence-based medicine and burn care in the occupied Palestinian territory: a pilot study

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Background The continued Israeli blockade of the Gaza Strip, occupied Palestinian territory (oPt), has detrimental effects on health care. Palestinian health-care workers have few opportunities for continuous professional development outside the oPt. e-learning and video-conferencing are seen as being key solutions to address the barriers in health care and education in the Gaza Strip. We report the results of a 2 year postgraduate programme in which teleconferencing and e-learning were combined for medical and nursing practitioners working in burn care in the Gaza Strip. The aims in the programme were to improve clinical services, research, and continued education in burn care. We also present a health-care-worker-focused assessment of the programme after the completion of the first academic year.

Methods 11 students (seven doctors and four nurses) working in burn care in the Gaza Strip were enrolled on the postgraduate programme for a diploma in burn care at Queen Mary University of London, London, UK, for the academic year 2010–11. The students' academic needs were identified through an initial teleconferencing interview and assessment of a self-rated questionnaire. Weekly educational meetings about clinical knowledge, research methods, critical analysis of medical literature, and principles of evidence-based medicine according to the BestBETs guidelines of Manchester Royal Infirmary, Manchester, UK, were scheduled between January and October, 2011. Learning was achieved with a combination of videoconferences with Skype (Luxembourg City, Luxembourg) and web-based e-learning modules with Blackboard Learning System (version 8.0). At the end of the first year, a second self-rated survey was sent to the students and completed anonymously to assess the process and progress of tele-education. All students provided both verbal and written informed consent.

Findings Between January and October, 2011, a total of 36 teleseminars and 1703 e-learning sessions were delivered to the 11 students: ten instructional sessions about academic practice; four about methods of evidence-based medicine; 11 about critical appraisal of scientific literature; four about academic writing; two about presentation skills; and four about journal club. Mean session time was 80 min (SD 12). Mean time spent by a student on the e-learning platform was 17 min (6) per login session. The mean mark for the assessment of 242 assignments to students in their first year of the programme was 67·4% (5·4). The results of a survey with the 5-point Likert scale confirmed that the programme's highest educational effect was through enabling practitioners to find and critically appraise information relevant to the daily care of their patients. As a result, the outcome of practice was defined and measured; and the awareness of the importance of quality control, audit, and research in health care was increased (nine, eight, and seven students, respectively, agreed or strongly agreed). Seven students thought that the programme's educational effect has led to direct improvement in the care of patients with burns. The results also showed some of the difficulties encountered with tele-education by the students; the top five reasons were inability to participate during the days of the practical clinic of the course (eight students), tele-educational conferencing sessions not long enough or too few (six), power cuts (six), inadequate tele-education facility (five), and difficulties in accessing library e-resources (three). The assessments of the students informed future development priorities of the programme by improving the content of the multimedia library (seven students thought that the multimedia components of the programme were inadequate in the provision of examples of good practice in burn care).

Interpretation Telemedicine educational programmes are effective for the measurable achievement of learning objectives, thereby ensuring continuous professional development for health-care workers and guiding the care of patients. Further development of burn-care services in the Gaza Strip through education requires improvement of tele-education facilities.

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Contributors

AMG conceived and designed the study, directed its implementation, and wrote the Abstract. MZ reviewed the methods and commented on the survey questionnaire. NAS undertook the students' feedback survey and gathered the results. CG and GA-S provided conceptual advice and edited the Abstract. SM supervised the study and helped prepare the Findings section of the Abstract. All authors discussed the results and their implications, and commented on the Abstract at all stages.

Conflicts of interest

We declare that we have no conflicts of interest.

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Structural birth defects in the Gaza Strip, occupied Palestinian territory: a cohort study

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Background No data were available for structural birth defects in the Gaza Strip, occupied Palestinian territory. We developed a questionnaire to estimate the incidence of late miscarriages (spontaneous delivery >16 weeks and <28 weeks), premature births (<32 weeks or weight <1·5 kg), stillbirths, structural birth defects, and occurrence in siblings of the fetus and first-degree and second-degree relatives of the parents. We investigated possible associations between birth defects and exposure to weapons during Israel's Operation Cast Lead on the Gaza Strip from Dec 27, 2008, to Jan 18, 2009.

Methods A medical team interviewed pregnant women giving birth at the Al-Shifa Hospital, Gaza Strip, using a questionnaire that included questions from the International Clearinghouse for Birth Defects. The defects were then classified according to Eurocat-International Statistical Classification of Diseases and Related Health Problems 10th Revision. All parents were asked about their exposure to white phosphorus. Only parents of a child with a birth defect were asked about birth defects in first-degree and second-degree relatives of the parents, and their exposure to bombing; 44 of 55 parents responded fully. We did subgroup comparisons using Fisher's test; 95% CIs are reported with the point estimates, and a p value of less than 0·05 was judged to be significant. Permission to undertake this study was granted by the Ministry of Health, Gaza Strip. Mothers provided written informed consent for use of information about them and for hair samples to be obtained from their children.

Findings Of 4027 consecutive deliveries between May 4 and Oct 4, 2011, we registered 94 miscarriages (23·3 per 1000 births), 77 premature births (19·6 per 1000 births), 30 stillbirths (7·4 per 1000 births), and 55 infants with structural birth defects (14·0 per 1000 births). The types of birth defects were neural tube (12 [22%]), multiple (nine [16%]), kidney (eight [15%]), cleft lip or palate (seven [13%]), limb (four [7%]), facial (four [7%]), cardiac (three [5%]), abdominal wall (three [5%]), gastrointestinal (two [4%]), lung (one [2%]), urogenital (one [2%]), and Edward's syndrome (one [2%]). Comparison with data in the 2009 report of the International Clearinghouse for Birth Defects showed that the frequency of the birth defects registered in the Gaza Strip was in the range of frequencies registered in developing countries and less than those in highly developed countries. The most obvious difference was the higher frequency of kidney birth defects than in northwestern countries, possibly due to a common polymorphism for polycystic kidney in Arab groups. Cardiac diseases, 5% in our register, were lower than the 20–30% reported worldwide. We are aware that this difference is due to a lack of echocardiography monitoring at birth in the Gaza Strip, thus the total frequency we report is likely an underestimation. 16 (29%) of 55 couples with children who had birth defects and 1029 (27%) of 3811 with children without such defects were registered as being intermarried (difference 2%, 95% CI –10 to 14; χ^2 test, p=0·85). 11 (20%) of 55 couples with a child with a birth defect had a previous child with a birth anomaly; five children had the same defect as their siblings and six had different birth defects. No cases of birth defects were reported in 643 siblings of the parents, but 14 of 1423 offspring (9·8 per 1000 births) of the siblings had birth defects. These modalities of presentation of birth defects are compatible with the occurrence of novel genetic or epigenetic sporadic events in the parents or during pregnancy that affect the development of the embryo. In 12 (27%) of 44 families with children with birth defects, one or both parents were exposed to white phosphorus during Operation Cast Lead compared with 49 (2%) of 2933 parents with children without such defects; the difference was significant (25·6%, 21·4–29·8; p<0·0001). These families' homes were at the site of the attacks. Bombing of the house, removal of rubble, or on-site reconstruction were reported by nine (20%) of 44 couples with children with birth defects. Exposure to bombing was not recorded for parents with children without birth defects.

Interpretation Registration and clinical diagnosis of birth defects were possible at Al-Shifa Hospital, the main public hospital in the Gaza Strip. We expect our report of the frequency of birth defects is an underestimate and their frequency will be higher after the inclusion of cardiac and other defects, which manifest shortly after birth, following an improvement of the diagnostic equipment. This step will also certainly improve the general health care for newborn babies. The collaboration of the UN Special Coordinator for the Middle East Peace Process allowed us to confirm the subjective report of exposure to white phosphorus in 19 of 20 couples with children who had birth defects through the confirmation of retrieval of the ammunitions on the ground. Our findings suggest the need to investigate and identify chemical contaminants introduced with the use of weaponry and persisting in the environment, and their bioavailability and potential to cause long-term effects on reproductive health. These findings are a cause for

public health concern in the occupied Palestinian territory and other countries where similar western-made weapons have been or are being used.

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Contributors
PM, coordinator and principal investigator of the study, wrote the Abstract. AN, environmental consultant, contributed to writing of the Abstract. RM provided advice about the experimental plan and statistical analysis, contributed to the writing of the Abstract. HAD, KAM, ES, and MEB interviewed the participants and diagnosed the birth defects. RAS inputted and organised the data.

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

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UN Relief and Works Agency for Palestine Refugees in the Near East's medicine procurement processes and prices: a comparative performance assessment

Margaret Ewen, Maisa Al Sakit, Rawan Saadeh, Catherine Vialle-Valentin, Akihiro Seita

Background UN Relief and Works Agency for Palestine Refugees in the Near East (UNRWA), which is the main primary health-care provider for 4·9 million Palestinian refugees, including 2 million from the Gaza Strip and West Bank, occupied Palestinian territory, spent US$18·3 million on essential medicines dispensed free of charge through clinics in five areas of operation (fields)—Gaza Strip, Jordan, Lebanon, Syria, and West Bank in 2010. Because of budget constraints and increasing demand for medicines to treat chronic illnesses, we assessed UNRWA's procurement processes and prices of medicines.

Methods In July, 2011, we undertook 11 in-depth interviews with staff at UNRWA headquarters and selected facilities, and gathered data for procurement prices and amounts. WHO's operational principles for good pharmaceutical procurement were used as our framework for the assessment of processes. The prices of the top 80 medicines accounting for 93% of UNRWA's expenditure on medicines were analysed and compared with international, regional, and national references. Headquarter and field prices were compared for the few medicines procured centrally and locally.

Findings Analysis of the data indicated that UNRWA's procurement responsibilities are well defined, procedures are followed, and central procurement adheres strictly to UNRWA's formulary. However, only 101 suppliers were quality assured (prequalified) with UNRWA, of which 66 (65%) were from Europe or Jordan and only two (2%) were from East Asia. Criteria and processes for prequalifying suppliers were not clearly defined and there were few requirements for testing of product quality. Despite open tenders, awarded prices were not reported or shared with bidders. Quantification of needs was according to previous allocations, and budgets were set at a field level without the possibility of interfield transfer. The lack of integrated information-technology systems hindered inventory management and information sharing. Prices obtained through central procurement did not differ from reference prices; median ratios of UNRWA's prices to the reference prices of the Management Sciences for Health, Jordan's Joint Procurement Department, and the Gulf Cooperation Council were 0·99 (IQR 0·66–1·49), 1·00 (0·73–1·47), and 0·98 (0·59–1·39), respectively. Antidiabetic medicines and antibiotics accounted for 30% and 14% of expenditures, respectively. Application of the lowest comparator prices for the five products (one insulin, one oral antidiabetic, and three β lactams) that accounted for about 20% of the total expenditure on medicines would save $1·4 million. Local procurement was generally less cost effective than was central procurement, with notable differences between fields and medicines.

Interpretation Our results indicate that UNRWA's procurement of medicines is competitive. However, to improve the process, the following are needed: establishment of regulatory standards for supplier prequalification and product quality assurance to obtain improved prices by prequalifying more suppliers while focusing on product quality; reporting of prices of awarded tenders to increase competition and transparency; building of an integrated information-technology system to improve information sharing, quantification of needs, and monitoring of procurement; recentralisation of medicine budgets to increase equitable allocation of resources. The findings also show the burden of antibiotics and antidiabetic medicines on UNRWA's expenditures and the need for public health policies to target antibiotic overuse and preventable risk factors for diabetes.

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Contributors

ME designed the study, gathered, analysed, and interpreted the data, and drafted the Abstract. MAS gathered, analysed, and interpreted the data, and reviewed the Abstract. RS facilitated data gathering, analysed and interpretated the data, and reviewed the Abstract. CV-V reviewed the compilation of results, provided input to the analysis, and co-drafted the Abstract. AS identified the need for the study, facilitated its operationalisation, and reviewed the Abstract.

Conflicts of interest

We declare that we have no conflicts of interest.

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Major structural birth defects in children aged 0–2 years in the Gaza Strip: a cross-sectional study

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Background No information is available about the prevalence, phenotypes, and regional differences in major structural birth defects in children aged 0–2 years in the Gaza Strip, occupied Palestinian territory (oPt). As part of a wider reproductive health initiative that includes the introduction of uniform recording protocols in the main paediatric facilities in the Gaza Strip and the management of major structural birth defects, we undertook this study to identify and report missing information.

Methods Our study population was selected from all patients aged 0–2 years with major structural birth defects who were referred for surgery during the first 6 months of 2010 to one of five main paediatric hospitals (Nassr, Rantissi, Dorra, European Gaza Hospital, and Emirati) or to one of two paediatric surgical departments (Al-Shifa and European Gaza Hospital) in the Gaza Strip. Of these referrals, those with major structural birth defects (congenital heart disease, and renal, gastrointestinal, and CNS anomalies) were selected by the paediatrician for inclusion. From the children's records, we obtained the demographic details, risk factors associated with birth defects, family history of birth defects, and type of congenital anomalies noted during clinical examination by a skilled neonatologist and in subsequent investigations. We classified birth defects according to the primary defect, using International Statistical Classification of Diseases and Related Health Problems 10th Revision as a reference. We used a specially prepared form for recording the abstracted data, which were then analysed with SPSS (version 13.0). We obtained medical ethics approval for the study from the Helsinki Committee, Gaza Strip.

Findings Of 5254 children referred to one of the paediatric hospitals, 331 (6%) had major structural birth defects. A further 58 children were referred directly to one of the surgical units. Of 331 reported major birth anomalies, the most frequent were heart (148 [45%]), renal (49 [15%]), gastrointestinal (43 [13%]), and CNS and neural tube defects (40 [12%]). The estimated overall prevalence of severe structural birth defects was eight per 1000 in children aged 0–2 years. We noted significant regional differences in prevalence of birth defects—the highest prevalence was reported in the north of the Gaza Strip (nine per 1000) and the lowest in Khan Younis (three per 1000; p=0·009).

Interpretation Some types of major structural birth defects might have been under-represented in our survey (such as those affecting the eyes and ears) because some children were treated abroad. However, the data we have presented will provide a baseline for future monitoring of the frequency of major structural defects in the Gaza Strip.

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Contributors
All authors contributed equally.

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

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Double burden of undernutrition and obesity in Palestinian schoolchildren: a cross-sectional study

Salwa Massad, Steve Holleran, Mehari Gebre-Medhin, Omar Dary, Maysoun Obeidi, Paula Bordelois, Richard J Deckelbaum, Umaiyeh Khammash

Background Previous studies of nutrition were undertaken in adolescent schoolchildren in the West Bank or Gaza Strip, occupied Palestinian territory; most of the children were selected from only a few geographical areas. We assessed factors associated with stunting (height-for-age standardised scores <2), underweight (body-mass index [BMI] less than fifth percentile), overweight (BMI ≥85th percentile), and obesity (BMI ≥95th percentile) in schoolchildren and adolescents aged 6–15 years in the north, south, and middle of the West Bank in 2009.

Methods We surveyed a sample of 22 schools run by the UN Relief and Works Agency for Palestine Refugees in the Near East (UNRWA) and Palestinian Government. Using UNRWA's and the government's lists, we selected 1500 students from those attending school at the time the study was undertaken. We selected a set number of students per class from the first (mean age 6·71 years [SD 0·45]), sixth (11·82 years [0·57]), and ninth grades (14·83 years [0·61]), with a 1:1 ratio of boys to girls. The number of classes in each grade was between one and five. Siblings were excluded; we selected one student per household. We stratified the lists of students attending the UNRWA and government schools by location and sex. Within each school, 42 students per grade were selected using random sampling and recruited to the study—eg, if there were two classes A and B, we randomly selected 21 students from the alphabetical list for each class. BMI was defined according to age-specific and sex-specific cutoff values reported as per the 2000 growth charts of the Centers for Disease Control and Prevention, Atlanta, GA, USA, and height and weight measures as per WHO standards. Columbia University's Institutional Review Board, New York, NY, USA, approved the study protocol in December, 2008. Written informed consent and assent were obtained from sixth and ninth grade students and their parents.

Findings Data were obtained from 1484 (99%) of 1500 students. Prevalence of stunting was 97 (7%) of 1446 and underweight 94 (7%) of 1444 students. 180 (12%) of 1444 students were overweight and 86 (6%) obese. There were non-significant differences in stunting (52 [7%] of 772 *vs* 45 [7%] of 674; difference 0·98, 95% CI 0·67–1·44; p=0·96), underweight (25 [3%] of 771 *vs* 24 [4%] of 673; 0·92, 0·52–1·58; p=0·73), and overweight (99 [13%] *vs* 81 [12%]; 1·07, 0·81–1·40; p=0·64) between the children in government and UNRWA schools. Obesity was more prevalent in UNRWA schools than in government schools (56 [7%] *vs* 30 [4%]; 1·63, 1·06–2·51; p=0·0246). The hunger index, which is a composite score from the eight questions on the food insecurity questionnaire, was negatively associated with height for age (p=0·018). Factors associated with underweight were male sex (odds ratio 2·8, 1·5–5·3; p=0·002), mother being unemployed (3·0, 1·0–8·4; p=0·04), and households not having enough food to eat for at least 2 days in the past month (1·8, 1·0–3·3; p=0·05). Factors associated with obesity were age, with children in the ninth grade more likely to be obese (1·1, 1·02–1·2; p=0·01) than were younger children, and time spent watching television (1·1, 1·0–1·3; p=0·014). When overweight and obesity were combined in the analysis, they were significantly and inversely associated with increasing number of days spent playing sports (0·87, 0·77–0·98; p=0·02).

Interpretation By contrast with the results of previous studies, our data do not suggest an association between birth order, birthweight, size of the household, maternal education, and the child's nutritional status. Our results show the need to target food insecurity and improve child health in the occupied Palestinian territory, partly through increased awareness and promotion of sustainable healthy lifestyle changes for the prevention and management of undernutrition and obesity. The dissemination of information about the social, emotional, and cognitive effects of regular physical activity should be integral to health and nutrition programmes. We need to focus simultaneously on food insecurity and the establishment of a simple and reliable system for the detection of malnutrition; and we need to implement programmes related to the negative effects of adverse lifestyles.

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Contributors

All authors were responsible for the study design, data gathering, and interpretation of the results. SM, SH, and RJD contributed to the data analysis. SM, MG-M, OD, RJD, and UK contributed to the interpretation of the results. SM, SH, MG-M, OD, RJD, PB, and UK contributed to writing and editing the Abstract. All authors have read and approved the final Abstract for publication.

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Is academia meeting the needs of non-academic users of the results of research?

Iain Chalmers, Adib Essali, Emtithal Rezk, Sally Crowe

Background Medical and public health researchers often assume that their work will be relevant to patients, health professionals, policy makers, the public, and other non-academic users of research. However, on the basis of little available evidence, serious mismatches exist between what researchers do and what many non-academic users of research feel they need. Research agendas are determined by the priorities of research sponsors, academia, and academic researchers, and cannot be assumed to match the needs of non-academic users of research. The result is that much research is aimed at addressing questions that are of little or no interest to the potential users of research. Although many examples exist of the prioritisation of research in which only patients or health professionals are involved, formal processes in which these individuals and carers work together to agree about which inadequately addressed questions should be priorities for research seem to be rare. The James Lind Alliance (JLA) is an example of an initiative that meets this description. We investigated the prioritised research themes emerging from the JLA Priority Setting Partnerships.

Methods We reviewed themes that emerged from the JLA Priority Setting Partnerships for asthma, incontinence, vitiligo, eczema, stroke, prostate cancer, schizophrenia, aspects of balance, and type 1 diabetes mellitus.

Findings Priority themes for research that emerged from the JLA Priority Setting Partnerships include emphasis on the need to assess long-term effects (wanted and unwanted) of treatments; safety and adverse effects of treatments; effects of complementary and non-prescribed treatments; and the effectiveness and safety of self-care.

Interpretation Invitation for non-academic users of research to identify research priorities seems to lead to research questions that differ importantly from the focus of much of the current health research. The public ends up providing the resources to support academia's involvement in research. Therefore, researchers need to consider their responsibilities to take account of the needs of public and other users of research and ask themselves what they are doing to ensure that they are meeting these needs. Furthermore, non-academic users of research need to engage with the research community to encourage research that addresses their needs. To help non-academic users, we are assembling and developing educational resources in English, Arabic, and other languages.

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Contributors
IC drafted the report; SC identified common research themes arising from the JLA Priority Setting Partnerships; AE and ER produced material in Arabic for publication through Testing Treatments interactive, to help the public become more knowledgable about health research, and why they need to become engaged in research priority setting.

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We declare that we have no conflicts of interest.

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Role of political factors in wellbeing and quality of life during long-term constraints and conflict: an initial study

Brian K Barber, Clea McNeely, Carolyn Spellings

Background Although much is known about wellbeing and quality of life generally, there is insufficient understanding and measurement of human functioning during chronic constraint. This difficulty is especially true for populations whose constraints extend beyond economic disadvantage to include persistent political conflict and its associated constraints, as is the case for Palestinians living in the occupied Palestinian territory (oPt). In this study, the first phase of a project designed to assess the wellbeing of adult Palestinians, we sought to answer some fundamental questions about wellbeing and quality of life. This population cohort is of particular interest in terms of wellbeing because of its high political activism during the first intifada, and because it has endured a steady economic decline, increasing political constraints, and protracted political violence since then.

Methods In February, 2010, trained local fieldworkers from the Palestinian Center for Policy and Survey Research, Ramallah, West Bank, interviewed in Arabic 68 adults (33 men, mean age 34·8 years, range 21–53; 35 women, mean age 32·2 years, range 20–49) in the West Bank, East Jerusalem, and the Gaza Strip in 14 groups of five same-sex individuals (apart from two absentees). Participants were selected with purposive sampling to represent sex, region, refugee or non-refugee status, and (in the Gaza Strip) the main political factions of Fateh and Hamas. The focus of the interviews was on participants' perceptions of what constitutes quality of life and wellbeing in their society. Various methods were used to elicit this information during the interview, including the description of close associates who were doing fairly and less well, and ad-hoc listing and prioritisation of domains of wellbeing. The interviews of the 14 groups (including 68 individuals), each one lasting 60–90 min, were transcribed in Arabic and translated into and transcribed in English. Content analyses of the English transcripts were done with Atlas.ti (version 6.2.27) by three project staff, with several Palestinian key informants checking the coding of the transcripts. The study was approved by the institutional review boards of the University of Tennessee, Knoxville, TN, USA, and the Palestinian Centre for Policy and Survey Research. Interviewees provided written informed consent.

Findings In the analyses, we identified expected domains of wellbeing and quality of life—ie, economics, education, employment, family relations, personal characteristics, social relations, health, and religion. Examples of the prevalence of some of these conventional domains of wellbeing and quality of life include economic issues (n=65 [96%]), family relations (62 [91%]), and education (52 [76%]). Additionally, however, consistent with hypotheses about the central role of the political domain in the lives of Palestinians, most participants (27 [82%] men, 29 [83%] women) also mentioned political factors. Types of issues coded as being in the political domain included experience of occupation, perceived effects of occupation, political conflict, solidarity between political factions, freedom of expression, mobility constraints, safety or security, stability, and expectations of government provisions. Of these, safety or security and solidarity between political factions were more frequently discussed by the Gazan participants (n=40) than by the non-Gazan participants (n=28). 31 (78%) Gazans mentioned safety or security as an element of wellbeing compared with six (21%) non-Gazans. Similarly, 24 (60%) Gazans mentioned solidarity in the factions as an element of wellbeing compared with seven (25%) non-Gazans.

Interpretation The findings of this study contribute valuable and detailed insights into how wellbeing and quality of life are viewed under lifelong political conflict and constraints. The findings reinforce and expand the increasing recognition of the important role of the political domain in the definition of wellbeing in populations such as the Palestinians in the oPt. The substantial, refined elaboration of this domain by the participants we interviewed is especially valuable for the creation of methods for measuring political wellbeing and quality of life.

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Contributors
BKB is the principal investigator. BKB and CS supervised the data gathering. BKB, CM, and CS contributed equally to the coding and analyses of the data.

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

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Nutrition, tobacco use, and physical activity in the West Bank, occupied Palestinian territory: an environmental profile of community health

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Background With the epidemiological transition in the occupied Palestinian territory (oPt), cardiovascular diseases are becoming the leading cause of death. This increase might be partly attributed to changes in tobacco use, physical activity, and nutrition adversely affecting the health of the Palestinian population. Our aim is to describe the environmental factors that might unfavourably contribute to the health-related behaviours of communities in the oPt.

Methods We used the environmental profile of a community's health (EPOCH) questionnaire to gather data about walking and environmental factors that affect tobacco use and diet in the Palestinian population. The questionnaire was modified for use in the oPt—eg, because Israeli checkpoints create a barrier to walking through or between communities, we included information about the presence and distance of the checkpoints from community centres. 24 communities (nine urban, nine rural, and six refugee camps) were randomly selected from the north, centre, and south of the West Bank. Trained researchers directly noted and systematically recorded physical aspects of the environment, using standardised definitions from the EPOCH questionnaire. This study was approved by the Research Ethics Board at McMaster University, Hamilton, ON, Canada, and the Institute of Community and Public Health Ethical Review Committee, West Bank.

Findings 17 (71%) of 24 stores had one or more advertisement for unhealthy food and soft drinks; advertisements were more common in urban communities and refugee camps than in rural communities (seven [78%], five [83%], and five [56%], respectively). Food labelling on packets of locally made unhealthy food complied with the Palestinian laws of packaged food items, whereas imported packets did not. Different brands of cigarettes (mean 16 [SD 7]) were widely available in the stores, with urban communities having the highest choice (23 [5] *vs* 12 [4] in rural and 12 [8] in refugee-camp communities). Local and imported packets of cigarettes did not comply with the Palestinian smoking laws or the WHO Framework Convention on Tobacco Control—eg, warning labels on packets covered less than 20% of the area and none stated the percentage of nicotine or tar. Pavements were present on at least one side of the roads in five (21%) communities and were less common and of poor quality in rural communities. The mean score for pavement quality (maximum score of 10 indicating highest quality) was 5 (range 1–9) in the 24 communities: 8 (5–9) in urban, 3 (1–6) in rural, and 4 (1–7) in refugee camps. In ten (42%) communities (five [56%] urban, one [11%] rural, and four [67%] refugee camp), individuals had to pass through an Israeli army checkpoint to enter the community; checkpoints were a mean distance of 9 km (SD 8) from the community centre.

Interpretation These findings indicate several environmental factors that could be affecting the health-related behaviours of the Palestinian communities. Existing policies for tobacco and food labelling should be enforced and policies need to be developed to improve unrestricted walking in the local environment.

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Contributors
RK did the data gathering, statistical analysis, and wrote the findings section of the Abstract. CKC and SY contributed to the study design and interpretation of the results.

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

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The Population Health Research Institute, Hamilton, ON, Canada, funded the data gathering. The UN Relief and Works Agency for Palestine Refugees in the Near East facilitated data gathering in refugee camps.

Efficiency analysis of the health-care facilities of the UN Relief and Works Agency for Palestine Refugees in the Near East in Jordan: a retrospective, descriptive study

Xavier Modol, Stefania Pace-Shanklin, Wendy Venter, Ishtaiwi Salman Abu-Zayed

Background Through its health programme, the UN Relief and Works Agency for Palestine Refugees in the Near East (UNRWA) is initiating reforms to transfer the decision-making capacity and responsibility to managers of health-care centres. To improve the efficiency of these reforms, we assessed the data by health-care facility and compared the facilities according to well established indicators of efficiency—namely, productivity and costs.

Methods We undertook a retrospective, descriptive study of relevant data gathered during Jan 1, 2010, to Dec 31, 2010, from all 24 health-care centres of UNRWA in Jordan. We used a multidimensional approach to assess efficiency in which dimensions such as access, equity, use, and quality were included. Data were gathered for all these dimensions from several sources—departments of health, finance, procurement, and human resources at UNRWA. Estimates of population, health care, human resources, drugs and supplies, hospital admissions, and geographical access were obtained and, when possible, translated into monetary values. Data were compiled at UNRWA's health department and analysed with Microsoft Excel 2007 during Sept 1 to Nov 30, 2011.

Findings The estimated overall expenditure on health care in 2010 was US$ 19·7 million, yielding a mean of $15·5 per beneficiary actively using the service. 60% of facility-attributed costs were for staff salaries, 27% for drugs and supplies, and 8% for hospital support. Expenditure per beneficiary on pharmaceutical drugs was $4·32 (range 3·17–8·38) and hospital care $1·35 (0·82–3·06). For every 10 000 refugees served by UNRWA's health-care centres, there was one medical officer. The number of contacts and consultations with UNRWA's health-care centres was 3·6 (2·4–8·0) and 1·16 (0·83–1·84), respectively, per patient. Efficiency, measured as daily consultations per day per medical officer, average daily contacts per nurse, midwife, and skilled birth attendants, total expenditure per contact, and drug expenditure per curative consultation, was 90 consultations (33–142) per day per medical officer, total expenditure per contact $4·28 (3·41–7·72), and drug expenditure per consultation $1·39 (0·88–1·71). Indicators of availability, service use, and efficiency showed large differences between facilities. 0·96 medical officers, ranging from 2·3 in Aqaba to 0·54 in Irbid Town, served 10 000 refugees. 2·4 nurses (including midwives), ranging from 1·4 in Amman Town to 7·0 in Waqqas, served 10 000 people. 3·4 skilled birth attendants (physicians, nurses, and midwives) served 10 000 refugees. Waqqas, Mashare, and Aqaba had more than eight skilled birth attendants per 10 000 people, whereas Irbid Town, Amman New Camp, and Amman Town had two per 10 000 population. Use of health-care facilities was highest at Jerash's health-care centre, with eight contacts (preventive and curative visits) per refugee, and lowest at Irbid Town and Amman Town health-care centres, neither of which had more than 2·5 contacts per person during the year. Productivity (consultations per medical officer per day) was lowest at Aqaba health-care centre with 33 consultations per medical officer; this number was almost four times higher in Msheirfieh and Jerash Camp health-care centres (142 and 140 consultations, respectively).

Interpretation Resource availability, service use, and efficiency vary between the 24 health-care centres of UNRWA in Jordan. Overall, access to alternative public health-care providers (Ministry of Health and Royal Medical Services) seems to be the most important factor in determining efficiency of the health-care centres. For example, Jerash's health-care centre, which serves refugees from the Gaza Strip, occupied Palestinian territory, has the highest efficiency and serves the most refugees by contrast with Aqaba's health-care centre, which is attended by a small refugee population living far away from the largest towns and camps and has low efficiency. Although some centres' inefficiencies are unavoidable because of their location, UNRWA's health-care-system managers should reduce imbalances with an improved approach to resource allocation according to the actual number of people served and workload rather than the number of potential users. The data reported in this study cannot be easily compared with international data because UNRWA's health-care services are complementary to public health-care systems and mostly focused on primary health care.

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Contributors

XM designed the study, and gathered, analysed, and interpreted the data. SP-S supervised the study. WV participated in analysis of the study. ISA-Z participated in designing the study, gathering, analysing, and interpreting the data, and disseminated the study results.

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

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Proximate determinants of Palestinian fertility: a decomposition analysis

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Background The results of various studies have suggested a link between reduced fertility rate and improvements in women's health, particularly in the developing world. Despite the substantial reductions in Arab countries, the fertility rate in the occupied Palestinian territory (oPt) remains one of the highest in the world. Because of the increased education of Palestinian women, high rates of urbanisation, low rate of infant mortality, and improved access to contraception compared with other countries in the region with lower fertility rates, the persistently high fertility rate in the oPt has been described as a demographic puzzle. The proximate determinants of the high fertility rate in the oPt were analysed. These were based on Bongaarts framework and are the biological mechanisms, including marriage, contraception, post-partum amenorrhoea (as a result of breastfeeding duration), and induced abortion, that affect fertility.

Methods Bongaarts framework was used to do a decomposition analysis of the proximate determinants of the trends in fertility rates in the oPt between 1996 and 2006. Data for the analysis were obtained from the 1996 health survey, 2000 Demographic Health Survey, and 2006 Palestinian Family Health Survey. Separate indices for the contributions of marriage, contraception, and post-partum infecundability were calculated (index for abortion was not calculated for abortion because data were not available). The index of proportion of married women is based on the weighted average age of the age-specific proportions of married women, weighted according to the age-specific fertility rates for women. The index of contraception is based on the proportion of women using contraception and the effectiveness of the type of contraception used. The index of post-partum infecundability is based on the duration of post-partum amenorrhoea and breastfeeding. Access to the data set was granted by the Palestinian Central Bureau of Statistics.

Findings Between 1996 and 2006, contraceptive use accounted for the greatest fall in fertility; 16·8% in the West Bank and 14·7% in the Gaza Strip. In the West Bank, post-partum infecundability accounted for a reduction in fertility of 5·4% compared with 3·6% in the Gaza Strip, mainly because of increased duration of breastfeeding. Changes in the patterns of marriage—fewer marriages in the younger age groups 15–19 years and 20–24 years—led to a reduction in fertility of 6·7% in the Gaza Strip compared with 1·9% in the West Bank. Overall, most of the fall in fertility took place between 2000 and 2006 in the West Bank, whereas the reduction was fairly even between 1996 and 2006 in the Gaza Strip.

Interpretation Although the fertility rate in the oPt remains high, it fell substantially between 1996 and 2006. The main cause of the overall reduction was an increase in contraceptive use by women in the West Bank and Gaza Strip. Additionally, the regional variations are consistent with, and important for understanding, the overall trend in the fertility rate. The results of this study draw attention to the important part played by contraception in the decline of fertility in the oPt. However, reasons for increased uptake of contraception are not clear, and need further investigation to understand the context of the increase and to guide policy for service delivery.

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Contributors
WH did the analysis and wrote the Abstract. DH was the adviser on the study, monitored progress, and assisted in the revision and finalisation of the Abstract.

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Nosocomial infection in patients admitted to an intensive care unit at Al-Shifa Hospital in the Gaza Strip, occupied Palestinian territory: a retrospective assessment

Majdi Ashour, Khalil El-Nakhal

Background Admissions to intensive care units (ICUs) are generally associated with an increased risk of nosocomial infections. No data have been reported for the incidence and determinants of these infections in patients admitted to ICUs in the Gaza Strip, occupied Palestinian territory. Therefore, the frequency of nosocomial infections in patients admitted to the largest ICU in the Gaza Strip at Al-Shifa Hospital was retrospectively assessed.

Methods Systematic sampling was used to select the medical file of every tenth patient admitted to the ICU at Al-Shifa Hospital from Jan 1, 2006, to June 30, 2009, from the hospital's archive. All available files were included irrespective of the patient's age. Incomplete files and those of patients admitted from another ICU or who developed febrile illness before or on admission to the ICU were excluded. Information about patients was collated and entered into SPSS (version 19.0). The frequency distribution of the variables was analysed and the χ^2 test was used to assess differences between patients including in the duration of stay, illnesses, and the outcome of care. The study was approved by the administration of Al-Shifa Hospital.

Findings Of 206 patients (mean age 36 years [SD 25]) admitted to the ICU, whose medical files were selected, 128 (62%) were men. The mean period of stay at the ICU was 6·2 days (8·7). 55 (27%) patients stayed in the ICU for up to 1 day; 43 (21%) for 2–3 days; 72 (35%) for 4–7 days; 19 (9%) for 8–14 days; and the remaining 17 (8%) for more than 2 weeks. 50 (24%) patients had nosocomial infections—28 (56%) pneumonia, seven (14%) wound infections, seven (14%) multiple causes, three (6%) bacteraemia, three (6%) undetermined, and two (4%) infections related to the urinary tract. The causative organisms of the nosocomial infections were pseudomonas in 15 (30%) patients, klebsiella in eight (16%), acinetobacter in six (12%), *Escherichia coli* in five (10%), staphylococci in two (4%), *Enterococcus faecalis* in one (2%), and more than one microorganism in six (12%); the causative microorganisms were not identified in seven (14%) patients. 29 (81%) of 36 patients who stayed in the ICU for more than 1 week had nosocomial infections compared with 15 (21%) of 72 who stayed from 4 days to 1 week, and six (6%) of 98 who stayed for up to 3 days ($p<0·0001$ for overall difference between groups). The risk of nosocomial infections was increased in some groups: 13 (19%) of 68 patients with an internal medical diagnosis, 12 (19%) of 64 admitted for post-surgical care, ten (20%) of 50 admitted for post-neurosurgical care, five (38%) of 13 admitted after being resuscitated for cardiopulmonary arrest, and ten (91%) of 11 with multiple trauma developed nosocomial infections ($p<0·0001$). The risk of death was higher in the 50 patients who acquired nosocomial infections than in the 156 who did not (42% *vs* 21%; attributable risk percentage 50%, 95% CI 17–83; $p=0·013$).

Interpretation The high frequency and attributable risk percentage of mortality of nosocomial infections in the ICU at Al-Shifa Hospital indicate the need for additional preventive and control measures and a surveillance system for these infections in the ICUs of all hospitals in the Gaza Strip.

Funding None.

Contributors
MA designed the study; MA and KE-N supervised the data extraction; MA analysed and interpreted the data; and MA and KE-N wrote the Abstract.

Conflicts of interest
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Determinants and risk factors of neonatal mortality in the Gaza Strip, occupied Palestinian territory: a case-control study

Imad El Awour, Yehia Abed, Majdi Ashour

Background The infant mortality rate (IMR) per 1000 livebirths had fallen from 86 in 1970 to 69 in 1975, 43 in 1980, and 33 in 1985 in the Gaza Strip, occupied Palestinian territory. The slowing of this decline was due to an increase in neonatal mortality rate. In 2009, according to data from the Palestinian Ministry of Health, IMR in the Gaza Strip was 21·5 per 1000 livebirths. 73% of infant deaths were in neonates, with about 62% occurring in the early neonatal period (first week of infant life) and about 38% in the late neonatal period. We therefore ascertained risk factors related to neonatal mortality in the Gaza Strip.

Methods In a population-based, case-control study, 220 mothers of deceased neonates (cases) and 495 mothers of surviving babies (controls) were interviewed by female researchers using a structured questionnaire based on WHO's verbal autopsy questionnaire that was adjusted to the Palestinian context. Inclusion criteria for the cases were singleton newborn infants who died in the neonatal period (1–28 days after birth) in 2008. Two controls were matched for each case on the basis of sex, locality, and nearest 1 week of childbirth. Exclusion criteria were twins, stillbirths, infants born after 28 days, and neonates whose parents travelled from the Gaza Strip. Gathered data were entered into SPSS (version 11.5), grouped according to the variables, and analysed with multilevel logistic regression to assess differences in exposures between surviving and deceased neonates. The variables were socioeconomic background, maternal age, schooling, type of marriage of the parents, health status during pregnancy, parity, history of previous child death in the family, birth spacing, gestational age during delivery, type and place of delivery, neonatal birthweight directly after delivery, and effect of health service delivery on the outcome of birth and other conditions related to neonatal survival and death in the Palestinian context. Risk was reported as odds ratio (ORs) with 95% CIs and p values (p<0·05 was judged significant). An official letter of approval to undertake the research was obtained from the Helsinki Committee, Gaza Strip. Written informed consent was obtained from all participants.

Findings The risk of neonatal mortality was higher in the offspring of mothers in a consanguineous marriage (122 [55%] of 220) than in controls whose mothers were not in a consanguineous marriage (225 [46%] of 494; OR 1·49, 95% CI 1·08–2·04; p=0·014). Cases whose mothers had more than four dependants were at a higher risk than were controls whose mothers had fewer dependants (173 [79%] of 220 *vs* 147 [30%] of 494; 1·56, 1·07–2·27; p=0·05). Risk of death was higher for neonates born to mothers with a history of domestic violence during pregnancy than for controls whose mothers did not have this risk (48 [22%] of 220 *vs* 74 [15%] of 493; 1·58, 1·05–2·36; p=0·02). Newborn babies of mothers who attended fewer than four antenatal sessions during pregnancy had a risk of dying that was almost twice that of those whose mothers attended four or more times (21 [10%] of 219 *vs* 26 [5%] of 492; 1·99, 1·04–3·45; p=0·03). The risk of neonatal death increased greatly in premature babies than in babies born at term (78 [35%] of 220 *vs* 20 [4%] of 494; 13·04, 7·71–22·07; p=0·0001). The risk of neonatal mortality was higher in babies with a low birthweight than in those with a normal birthweight (96 [44%] of 219 *vs* 39 [8%] of 493; 9·08, 5·95–13·85; p=0·001) and was higher in the offspring of mothers with a history of neonatal death (80 [36%] of 220 *vs* 67 [14%] of 495; 4·26, 2·93–6·18; p=0·0001). The odds of mortality in babies who were unconscious after delivery was higher than in those who were conscious (31 [14%] of 220 *vs* five [1%] of 495; 16·07, 6·15–41·95; p<0·0001). The risk of death in neonates who were breastfed within the first hour of delivery was much lower than in those who were not breastfed in the first hour (56 [70%] of 80 *vs* 463 [95%] of 487; 0·12, 0·06–0·22; p<0·0001).

Interpretation Neonatal mortality in the Gaza Strip increases with mother's consanguinity, number of dependants, domestic violence during pregnancy, and suboptimum access to antenatal care, and the prematurity, low birthweight, and health of the neonate directly after delivery. A programme of sociocultural and economic approaches is needed, with improvement of the health-care services during pregnancy and the perinatal period to reduce neonatal mortality in the Gaza Strip.

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Contributors

IEA, YA, and MA contributed to the study design. IEA supervised data gathering and entry. IEA and YA did the data analysis. MA and IEA interpreted the data. All authors approved the final version of the Abstract.

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We declare that we have no conflicts of interest.

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Rapid assessment of the health needs of Palestinian refugees in Lebanon in 1996: a randomised study

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Background I worked in Lebanon from 1990–95 as a volunteer for Medical Aid for Palestinians (MAP) in the camps at Burj el-Barajneh, Burj Shemali, and Rashidia. In 1996, I undertook an assessment of the health needs of the residents at these camps and present the results here.

Methods Qualitative and quantitative data were gathered with three separate techniques. First, semistructured questionnaires were used to gather quantitative and qualitative information from ten families per refugee camp (Burj el-Barajneh, Burj Shemali, and Rashidia). The families were selected randomly with the help of the refugee-camp committees. The refugee camps did not have street names or house numbers. Using a rough map of the camp, I and the camp committee member went to the middle of the camp and started walking in one direction and chose the tenth house and then turned right and walked to the next tenth house and so on until we reached the required number of families (n=10) in each camp. The camps, originally built in the 1950s, had old and new sections and we selected houses from both sections. This purposeful sampling was the best possible way to randomise the selection of houses for the study. Second, a total of 12 focus groups, with six or seven people, were selected to represent the refugees in the three camps. The nominal group technique, a modification of the Delphi method, was used to identify the main perceived needs of the refugees. The focus groups were given a research question ("As a member of the Palestinian refugee community living in Lebanon, what services do you need to lead a healthy lifestyle") and the ten answers ranked as the most important were defined as the perceived needs of the refugees residing in the camps. The members of the focus groups were chosen from elderly (age >60 years), middle-aged (30–60 years), young (<30 years), and disabled populations in the camps. The numbers of men and women was equal per group. Third, one-to-one semistructured interviews were undertaken with the heads of the six main service providers in Lebanon during the 1990s (UN Relief and Works Agency for Palestine Refugees in the Near East, Palestine Red Crescent Society, Medical Aid for Palestinians, Norwegian Aid Committee, Norwegian People's Aid, and UNICEF). Glasgow University's ethics committee approved the study. The participants provided informed verbal consent, and could opt out at any point in the study. Because the numbers of people studied were small, the results were analysed manually and the qualitative data were analysed by grouping them into themes. Quantitative data were analysed with Minitab (version 10).

Findings From discussions in the focus groups, seven main health needs (similar to WHO's domains for quality of life) were identified. The first two needs were the refugees' civil, social, political, and employment rights and the right to return to the occupied Palestinian territory. The other needs were social determinants of health—namely, education, environment health (sanitation, refuse collection, and spraying of insecticide for mosquitoes), housing, safe drinking water, and electricity. The only medical need that was mentioned was to improve the hospitals and access to the various specialties. From the one-to-one interviews, information about the provision of services by the six main non-governmental organisations was collated. Comparison of this information with the perceived needs of the Palestinian refugees showed that many needs were not met or only partly met.

Interpretation The appraisal method used in this study was feasible, quick, and effective for the ascertainment of the perceived needs of refugees in Lebanese camps. In 1996, no coordination between the service providers resulted in the health needs of the refugees not being met. In 2012, at *The Lancet* Palestinian Health Alliance Conference, the health status of the Palestinian refugees in Lebanon was shown to have remained unchanged after 16 years.

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

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Physical and mental health of long-term Palestinian political prisoners: a qualitative study

Randa May Wahbe

Background 4489 Palestinians are political prisoners in Israeli prison facilities (IPS). Incarceration causes physical and emotional strain on the prisoners during and after detention. Little research has been focused on the health effects of imprisonment on Palestinians. The aim in this study was to assess the physical and mental health of long-term detainees in IPS, especially with respect to nutrition and conditions of the facilities.

Methods Individuals were selected from a register of 477 ex-detainees released in a prisoner exchange deal on Oct 18, 2011, with convenience sampling—ie, dependent on availability and consent of the person. People who had served less than 8 years in prison or resided outside the West Bank, occupied Palestinian territory, were excluded. 99 prisoners were eligible for the study. Because of budget constraints, only the first ten prisoners, eight men and two women, who consented and were available participated in the study. The participants' testimonies and recollections of events and medical diagnoses were gathered qualitatively with semistructured interviews with a 75-item questionnaire. The questionnaire was reviewed and approved by the Ministry of Detainees and Ex-Detainees, Ramallah, West Bank, which also facilitated the consent of the participants. The questions were modelled on WHO's quality of life 26-item questionnaire and RAND Health's 116-item medical outcomes survey. The focus of the interviews was on post-detention physical health (as assessed at a hospital of the Palestinian Authority), feelings, and a composite account of prison conditions. Interviews were recorded and transcribed. Summary statistics and qualitative analysis were used and responses were analysed thematically. Verbal informed consent was obtained from the participants and recorded.

Findings The mean age of the prisoners was 46·9 years (SD 7·9) and imprisonment time was 20·6 years (5·7). Since Feb 26, 2012, five of ten ex-detainees were still receiving treatment for illnesses they contracted during imprisonment. While in prison, four individuals developed peptic ulcers, three had various stomach ailments—colitis, digestive complications, and gallstones; they attributed these problems, diagnosed after release, to nutritional deficiencies. Although some prisoners were diagnosed while in prison after reporting symptoms at clinics for several years, all prisoners confirmed their diagnosis and were treated on release. All respondents had dental problems, with three reporting periodontal disease that was diagnosed by a dentist after release. Eight respondents reported feeling tense, with seven having this feeling regularly within the previous month. Eight individuals felt emotionally stable within the previous month; however, reacclimatisation to societal norms was stressful. All respondents reported that the IPS used the prison clinics to coerce political information from them in exchange for treatment, causing many of the detainees to avoid these clinics except in dire circumstances. Other crucial factors in the prisoners' abstention from clinic attendance were frequent denial of treatment and their distrust of the effectiveness of the medical care provided by the IPS. Individuals who did seek medical treatment had to wait several months and sometimes many years before being permitted to visit a prison hospital and receive treatment. As a consequence, small medical issues became dangerous health complications that required intensive treatment or hospital admission after release from prison. One prisoner was denied treatment for 1·5 years for what he described as serious stomach pain that forced him to be bedridden for days at a time. 1 month after his release, he had a cholecystectomy in a hospital of the Palestinian Authority. His surgeons told him that if he had waited any longer for treatment, his gallbladder would have ruptured. Another prisoner was given incomplete treatment for periodontitis during 10 years. Her ailments became so severe that on release, she had to have several operations. During their interviews, respondents described overcrowding, humidity, pest infestation, and general lack of hygiene as widespread, and felt that poor prison conditions negatively affected their overall health.

Interpretation The prison environment exacerbates the physical health problems of detainees. Insufficient nutrition over a long period is the main contributing factor in the types of ailments, particulary dental hygiene and digestive or stomach problems, affecting prisoners. Inadequate provision of health care in Israeli prisons seems to be the cause of poor health in prisoners. Continued follow-up of long-term prisoners is needed to monitor and improve their physical health.

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

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Outcomes of cardiac surgery in the Gaza Strip, occupied Palestinian territory: a cross-sectional study

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Background In response to the difficulties in access to cardiac surgery that have resulted from the siege on the Gaza Strip, occupied Palestinian territory, facilities for cardiac surgery have been introduced at Al-Shifa Hospital. We investigated the types and short-term outcomes of all surgical operations for coronary, valvular, pericardial, and congenital disease at the hospital.

Methods Data were obtained retrospectively from the medical records of all 216 patients who underwent 261 cardiac operations at Al-Shifa Hospital. We used the number of patients (not operations) as our unit of analysis. We used SPSS (version 17.0) to analyse the data and and χ^2 to assess the relations between the study variables. The study was approved by the Helsinki Committee, Gaza Strip.

Findings 216 patients had cardiac surgery from Jan 1, 2010, to Jan 31, 2011; 147 (68%) were men and 69 (32%) were women. 119 (55%) patients were aged 40–60 years, and 32 (15%) were younger than 40 years. None of the women and 85 (58%) men were smokers. 105 (49%) of 216 individuals had hypertension, 89 (41%) diabetes, and 59 (27%) dyslipidaemia, and 72 (33%) reported a family history of coronary artery disease. Of 154 (71%) patients undergoing isolated coronary surgery, 74 (48%) had a myocardial infarction, 85 (55%) stable chronic angina, and 57 (37%) other symptoms (eg, dyspnoea and atypical chest pain), and 78 (51%) had disease involving at least two vessels and 25 (16%) one vessel (left main stenosis or left main stem stenosis in 20 [13%] cases). The frequency of coronary artery bypass grafting was greater in men than in women (119 [81%] of 147 *vs* 35 [51%] of 69; p<0·0001). 104 (68%) of 154 patients had two coronary grafts. The type of valvular surgery was aortic in five (42%) of 12 men and two (20%) of ten women; double valve surgery was undertaken more often in women (four [40%] *vs* two [17%]). Nine patients had surgery for congenital abnormalities and 15 for pericardial disease; both types of surgeries were more common in women than in men. Overall, 116 (54%) of 216 patients had surgical complications—39 (18%) had bleeding and 32 (15%) infection, reoperation was required in 45 (21%), and 13 (6%) died within 30 days of their operations.

Interpretation The introduction of heart surgery for health care in the Gaza Strip has been associated with short-term mortality rates that are similar to those reported in other countries—eg, 5·3% in a teaching hospital in Iran versus 6% in the Gaza Strip. Attention to basic hygiene during medical and surgical procedures such as sterilisation and use of aseptic techniques will help to reduce the frequency of surgical complications and deaths.

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Contributors
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Assessment of services for diabetes mellitus in clinics in Ramallah, West Bank, occupied Palestinian territory: an evaluation study

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Background Diabetes mellitus is a leading cause of morbidity and mortality worldwide. Few reliable data about its management and complication rates have been reported in the occupied Palestinian territory (oPt). Services are offered to patients with diabetes by four main providers: Ministry of Health (MoH), UN Relief and Works Agency for Palestine Refugees in the Near East (UNRWA), non-governmental organisations (NGOs), and the private sector. However, the main components of their services have not been assessed systematically in the reports. Our objective therefore was to assess the provision of services for disease management (including infrastructure and related equipment), training needs of health-care personnel, adherence to guidelines for disease management by the clinics of the MoH, UNRWA, and NGOs in Ramallah, West Bank, oPt, for patients with diabetes.

Methods We assessed 11 clinics in Ramallah between Jan 27 and Feb 24, 2009. Four were clinics of the MoH, three UNRWA, one NGO, and three joint clinics of MoH and NGOs. We assessed the clinics through semistructured interviews with the doctors, nurses, pharmacists, and laboratory technicians managing patients with diabetes; examination of the infrastructure of the clinics, measurement of crowding, and review of one to three patients' consultations per clinic with doctors and nurses; and review of three to five sample records per clinic to ascertain their completeness. Consent was obtained from the various stakeholders to assess their clinics, and health professionals working at the clinics to interview them and review the records of their patients. The aim of reviewing the records was to assess their completeness and we did not use the names of the patients or the actual data on the record.

Findings The management guidelines and provision of services for patients with diabetes differed between providers. Services were most centralised at MoH clinics. Insulin was provided at two clinics of MoH, one joint clinic of MoH and NGO, and all clinics of UNRWA. All health-care personnel at the clinics of UNRWA and NGO and the joint clinics of MoH and NGOs were trained according to their respective provider's guidelines compared with none of those at the clinics of MoH. Weight and height were measured and body-mass index was calculated at one clinic of MoH, clinic of the NGO, two joint clinics of MoH and NGO, and all clinics of UNRWA. Blood pressure was measured at three clinics of MoH, two joint clinics of MoH and NGO, clinic of NGO, and all clinics of UNRWA. Equipment for the assessment of diabetic complications was available in some clinics but rarely used. For example, ophthalmoscopes were available at three clinics of MoH, three joint clinics of MoH and NGO, one clinic of UNRWA, but used in one joint clinic; visual acuity charts were available at one clinic of MoH, one joint clinic of MoH and NGO, and two clinics of UNRWA; electrocardiogram machines were available at three clinics of MoH, three joint clinics of MoH and NGO, two clinics of UNRWA, and clinic of the NGO, but used in one joint clinic of MoH and NGO, two clinics of UNRWA, and clinic of the NGO; tuning forks were available in two joint clinics of MoH and NGO and two clinics of UNRWA. Monofilament was not available in any of the clinics. Foot-care equipment was available at one UNRWA clinic but was not used. The glycated haemoglobin A_{1c} test was available at the clinic of the NGO and the three joint clinics of MoH and NGO. Microalbumin test was not available at any of the clinics. A nutritionist was available at the clinic of the NGO and one joint clinic of MoH and NGO. The consultation time with doctors and nurses at the clinics of the MoH and UNRWA was short (3–10 min) and consultations were not individualised or recorded. Records at the clinics of UNRWA, clinic of the NGO, and the joint clinics were better organised and more complete than were those of the MoH clinics. These clinics had special records with complete information for patients with diabetes whereas the clinics of MoH had different types of records with incomplete information. Monitoring of patients was more systematic at the clinics of UNRWA and NGO and the joint clinics of MoH and NGO than at the MoH clinics. In the clinics of UNRWA and NGO and the joint clinics of NGO and MoH, patients were given appointments and were monitored according to the protocols in these clinics (for laboratory tests and physical examination), whereas at the clinics of MoH an appointment system and protocols for monitoring were not used.

Interpretation High numbers of patients, insufficient staff training, and inadequate infrastructure are the main impediments to the proper management of diabetes in the oPt. Recommendations to improve services for patients with diabetes are to standardise the different guidelines and have a comprehensive approach to management with provision of training for health-care providers with respect to patient education and an improved system for keeping records of patients. Since undertaking our assessment of the services for diabetes provided by the clinics in Ramallah,

the MoH has taken action by developing a strategy for the management of non-communicable diseases, with a WHO STEPwise approach to risk factor surveillance of such diseases, and training staff in diabetes care.

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Contributors
NM contributed to the research design, development of the methods, and data gathering and analysis. AS contributed to data gathering and analysis. RK and AH contributed to the research design and development of the methods. All authors contributed to the writing of the Abstract.

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

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Dignity and its components in Palestinian adolescents and young people: a pilot study

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Background The results of previous studies have indicated an association between loss of dignity, or humiliation, with negative health outcomes in Palestinian youth living under chronic exposure to military occupation and violence in the West Bank, Gaza Strip, and East Jerusalem, occupied Palestinian territory. We therefore sought to identify features of the obverse of humiliation—namely, dignity—because the results would be useful for the development of a measure of dignity and its association with health outcomes.

Methods In a pilot study, we used qualitative methods to assess how Palestinian adolescents and young people (aged 14–25 years) define dignity and its components; the factors that affect dignity; and the importance of dignity to young people's sense of wellbeing. 102 adolescents and young people (aged 14–25 years) were interviewed with a semi-structured questionnaire based on previous findings. We used convenience sampling to select male and female participants in a ratio of 1:1 from four academic institutions in the centre of the West Bank—undergraduates from Birzeit University (n=34), and high-school students from a private coeducational school in Ramallah city (n=34) and two single-sex governmental schools (one for boys and one for girls) in the semirural town of Birzeit (n=34, 18 female students). The qualitative data were assessed carefully through repeated readings for familiarisation, gradually showing patterns and themes. Data were then coded systematically in thematic tables so that the responses could be clustered. The results were interpreted on the basis of the research objectives and emergent themes. Formal approval to undertake this pilot study was obtained from the Palestinian Ministry of Education. We obtained verbal informed consent from the participants.

Findings The mean age of all 102 participants was 17·26 years (SD 2·49), undergraduates from Birzeit University 20·29 years (1·82), girls at a governmental school 15·91 years (0·36), boys at a governmental school 15·18 years (0·39), and students at the private coeducational school 15·94 years (1·01). Four potential domains for dignity or the loss of dignity emerged: respect for oneself and others; abiding by social norms, traditions, and customs; pride and honour; and personal and collective freedom and independence. The most frequently cited dignity domain was respect for oneself and others, followed by the personal and collective freedom and independence domain. Dignity was reported as being important to wellbeing by all the participants. The loss of dignity was expressed with two specific Arabic terms, *ihaneh* and *thul*. The definition of *ihaneh* is a private and personal feeling, usually during or after an event, related to an individual (such as being humiliated by your parents or siblings), and is transient because it can usually be overcome. *Thul* is described as an emotion much larger than is *ihaneh*, affecting the collective rather than the individual (such as the *thul* in people crossing Israeli army checkpoints), and cannot usually be overcome and can therefore be a permanent feeling.

Interpretation These initial results need to be validated for meaning and internal consistency in the local context and affirm the need for continued development of a quantitative method for the measurement of dignity. Measurement of dignity can be used as one of the indicators of social suffering related to war and for the assessment of wellbeing, health-related quality of life, and other subjective measures of health. In view of the recent Arab uprisings and the call by young Arab people for dignity, and not only bread, it could also be useful for the assessment of wellbeing in young people in a regional context.

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Contributors
RG contributed to the conceptualisation of the study. ZA and RG developed the interview schedule, completed the analyses, and wrote the Abstract.

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We declare that we have no conflicts of interest.

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