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Abstract Book

1. Social determinants of health

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Social determinants of health (SDH) are the conditions in which people are born; grow up, live, work and age, including the way health systems are put in place to provide services. These conditions are governed by economics, legal frameworks, social policies, environment, and politics. The social determinants of health are responsible for 50% of health outcomes.

In 2008, the World Health Organization (WHO) Commission on Social Determinants of Health produced an extensive prescription for what is required to “close the gap” across all sectors of society. At the 2009 World Health Assembly, Member States resolved to put those recommendations into practice by adopting resolution WHA62.14 Reducing health inequities through action on the social determinants of health. This was followed by the 2011 World Conference on Social Determinants of Health in Brazil, which resulted in the Rio Political Declaration on Social Determinants of Health and its subsequent endorsement by the 130th session of the Executive Board (January 2012) and World Health Assembly (WHA65.8).

In 2015, focus continued on the implementation of the Rio Political Declaration in the region. A Regional Consultation on Reducing Inequalities through Action on SDH, was hosted by the Islamic Republic of Iran in April 2015 where an action framework on SDH which was developed. The main components of this framework are; evidence building and advocacy, capacity building, governance, integration of SDH in the five WHO Regional priority areas and partnership& harmonization.

To operationalize the framework, four countries (Iran, Jordan, Morocco and Sudan) conducted SDH in-depth assessments for developing action plans. Since the meeting, Palestine has also expressed interest in undertaking an in-depth assessment. The preliminary results of these assessments were presented to the Sixty-second Session of the Regional Committee, and resolution EM/RC62/R.1 urged MS to “assess inequalities in health and their related social determinates, identify priority actions and monitor progress”..

In Palestine, preliminary data shows that the impact of war and occupation is the main social determinant of health, directly or indirectly. The separation wall and checkpoints limit the movement of the population in the West Bank and their accessibility to health care, especially to secondary and tertiary health services. In addition, lack of access to water and sanitation has been identified as the second social determinant of health. Furthermore, the current situation is dominated by unemployment, poverty, damage to infrastructure (especially housing and water supply), lack of social protection, increased tobacco consumption, poor food quality and increased prevalence of mental disorders.

Preliminary results show that the five countries share common factors including high political commitment, incomplete data on health inequities, with significant data gaps especially at sub-

national level. While social determinants are country specific, some determinants are common to all countries, Ministries of Health of the five countries are facilitating and coordinating the work on social determinants of health and health in all policies" (HiAPs) and are taking the agenda forward.

2. How important is health for income inequality? A decomposition analysis applied to the occupied Palestinian territory

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Abstract submitted by Mohammad Abu Zaineh on November 30, 2015 (mohammad.abu-zaineh@inserm.fr; mohammad.abuzaineh@univ-amu.fr)

Background The contribution of income inequality to health inequality has widely been examined in the context of developed and developing countries. However, there is little credible evidence on the impact of health on income inequality in the resource-constraint settings. Previous studies conducted in the developed countries have already indicated several mechanisms through which health affects income inequality, with the labor market being an important channel (e.g., productivity differences due to ill-health). However, given the different levels of development, there are reasons to believe that health may represent a greater constraint on earnings in low-income settings. The purpose of this study is to examine the relationship between income and health in the context of both regions of the oPt: West Bank (WB) and Gaza Strip (GS).

Methods Data are taken from the household health expenditure survey (2004) covering 4,014 households. It provides information on individuals' health status, earnings and other socio-economic characteristics. We assess the strength of the relationship between health and income to determine its relevance to the explanation of income inequality. We apply a Shapley value approach to assess the contribution of health to income inequality. The analysis involves estimating and decomposing the relative Gini index. The contribution of each variable to income inequality is then computed as average marginal effect holding all other covariates at the mean.

Findings* Initial analyses indicate clear age-specific health-income gradients. This is particularly observable for the working age population. For this group, the gap between the lowest quintile and the rest is especially noticeable in the GS. Results also indicate that the chronically ill live in households that earn less, on average. Again, this difference is more pronounced in the GS. The above trends are confirmed by the regression analyses, which show a significantly negative effect of the proportion of adults in the household with chronic illness on income. The lack of education and employment, in addition to living in GS, appear to have the highest

negative effect on income. Interestingly, the decomposition analyses reveal that ill-health significantly contributes to income inequality, slightly higher in GS, while such an effect is reduced when we control for employment status.

Interpretation Our results suggest the presence of an ubiquitous relationship between health and income that deserves attention. The contribution of health to income inequality depends on how it is distributed. Evidence supports a significant impact of ill-health on income. This mainly operates through employment. In addition, variation in exposure to health risks early in life is a potentially important mechanism through which health may generate and sustain income inequality. Evidence that income has an impact on health in adulthood is weak. Of course, considering the impact that health has on the distribution of income and the effect of the latter on the distribution of health requires a more elaborate analysis and richer data than we have. For instance, by analyzing how health may affect productivity, wages, and the formation of human capital, or by analyzing the lifetime effects operating through education and occupation.

***Note** that these results are preliminary. The current regression analysis is based on an OLS. Other sophisticated models are currently being explored.

Word count: 498

3. Well-Being and associated factors in the occupied Palestine territory (oPt)

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Background: Subjective well-being is broadly defined as "peoples' positive evaluations of their lives".¹ It consists of two main components: cognitive and affective.² Subjective well-being is affected by both internal as well as external factors,³ and is important to measure for the purpose of assessing population life quality and health. The aim of this study is to estimate the prevalence of well-being and identify some of its associated factors in the occupied Palestine territory (oPt).

Methodology: Data used in this study were obtained from the National Time Use Survey conducted by the Palestinian Central Bureau of Statistics (PCBS) 2012-2013, using a representative sample from both the West Bank and Gaza Strip. The response rate was 79.6%. Univariate and bivariate analysis were conducted on people aged 18 years and above. Multivariate analysis (Regression) was performed with factors found significant in cross tabulation, using SPSS® version 20.

Results: 33.8% (2395) of respondents reported low levels of well-being (ill-being). Neither age, nor sex, nor region were found significant in regression analysis. People with primary and secondary education were more likely to report high levels of well-being compared to the illiterate or those who can just read and write [OR=1.21, 95% CI(1.01-1.46)]. Married people were more likely to report high levels of well-being compared to the widowed, divorced, or separated [OR=1.30, 95% CI (1.02-1.65)]. Respondents working 35 hours or more were more likely to report high levels of well-being compared to non-working people [OR=1.36, 95% CI(1.17-1.57)]. People with a high standards of living were more likely to report high levels of well-being compared to those with low standards of living [OR=1.88, 95% CI(1.62-2.18)], and people with a medium standards of living were more likely to report high levels of well-being compared to people with low standards of living [OR=1.44, 95% CI(1.28-1.61)]. Respondents who participate in community, cultural, and social events were more likely to report high levels of well-being compared to those who do not participate [OR=1.27, 95% CI(1.05-1.53)]. People who attend or participate in religious activities were more likely to report high levels of well-being compared to those who do not participate [OR=1.27, 95% CI(1.12-1.43)]. Respondents who do not regularly follow the mass media were more likely to report high levels of well-being compared to those who regularly follow [OR=1.19, 95% CI(1.04-1.36)]. Residents of rural areas were more likely to report high levels of well-being compared to people living in camps (refugees) [OR=1.34, 95% CI(1.11-1.62)].

Conclusions: About one-third of adult Palestinians reported low levels of well-being (ill-being), a finding which in itself requires attention. Education, marital status, employment, high living standards, community participation, and religious activities were found to be protective against ill-being. Further investigations are required to determine additional causes of ill-being in the oPt. Contextual factors such as political instability and siege conditions should be taken into account when studying Palestinian well-being in the future.

Word count: 472

4. Socio-economic status and chronic disease in the West Bank and the Gaza Strip - among Palestinians living in and outside refugee camps

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Background: In the Occupied Palestinian Territory (OPT) a larger part of the population is exposed to poverty, unemployment and low educational attainment. The purpose of the study was to investigate the association between socio-economic status (SES) and self-reported chronic disease among the Palestinian population in the West bank and the Gaza Strip, and whether this association differed among Palestinians living in refugee camps.

Methods: The study was based on data from two representative samples of the Palestinian population in OPT collected by the Palestinian Central Bureau of Statistics in 2006 and 2010. Completed level of education, wealth, and employment status among Palestinians aged 25 and older were used as SES measurements. The participants were categorized as having a chronic disease if they reported to have been diagnosed with at least one chronic disease by a medical physician and received treatment for the disease. The association between SES and chronic disease was estimated by logistic regression models adjusting for age, gender, marital status, region (The West bank or the Gaza Strip), type of area (urban, rural or refugee camp) and smoking. The models were further stratified on participants living in or outside the refugee camps in order to estimate the association for the two subpopulations. Finally, the prevalence of chronic disease between Palestinians living in or outside the refugee camps was compared and further adjusted by SES.

Findings: Overall, increasing prevalence of self-reported chronic disease among men and a decreasing prevalence among women from 2006 to 2010 in all categories of the three SES measurements was observed. Highly significant associations between all SES measurements and self-reported chronic disease were found. In 2010 OR of reported chronic disease among illiterate men was 1.37 (95% CI: 1.21-1.56) compared to men with an elementary or preparatory level of education. Among women OR was 1.45 (CI: 1.29-1.63). Compared with men in the richest quintile, OR among men in the poorest quintile was 1.70 (CI: 1.47-1.96). Among women OR was 1.80 (CI: 1.56-2.07). Compared with employed, OR among unemployed was 1.50 (CI: 1.31-1.71) for men and 1.12 (CI: 0.76-1.65) for women. Similar results were found for 2006. The associations between the three SES measurements and chronic disease did not differ between participants living in or outside refugee camps. However, the prevalence of self-reported chronic disease was significantly higher among Palestinians living in refugee camps compared to those living outside refugee camps, except for women in 2006, and this higher prevalence of self-reported chronic disease did not change significantly when adjusted for SES.

Interpretation: We found highly significant associations between SES and self-reported chronic disease in the Palestinian population in the West Bank and the Gaza Strip with the strongest association for the part of the population with the lowest level of SES. Although the prevalence of chronic disease was significantly higher among Palestinians living in refugee camps than among those living outside the refugee camps, the pattern of association between SES and self-reported chronic disease did not differ between the two subpopulations.

Word count: 496

5. Poverty, food insecurity and health of Palestinian refugees in Lebanon and recently displaced from Syria to Lebanon: Findings from the 2015 socio-economic household survey

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Background: The UN Relief and Works Agency for Palestine Refugees in the Near East (UNRWA) has provided health and education services to Palestine Refugees in Lebanon (PRL), as well as food assistance and welfare support to the most vulnerable since 1978. The additional 42,000 displaced Palestine Refugees from Syria (PRS) to Lebanon, have placed additional pressures on already frail health and education services. While rights to employment of Palestinians remain limited, and living conditions in camps deteriorate, the situation of PRL and newly protracted PRS populations is precarious. The objectives of this study were to provide an updated profile of the socioeconomic and health status of PRL, and of PRS, following their massive influx into Lebanon.

Methods: A nationally representative household survey of PRL and PRS households was conducted in April 2015, using a multi-stage cluster random sampling approach. The questionnaire included modules on socio-economic, demographic, health and food security variables. The upper poverty line was defined as 6.84USD/person/day, and the lower poverty line at 2.47USD/person/day. Food insecurity was assessed using the 7-item Arab Family Food Security Scale, and categorised into moderate food insecurity (a score of 3-5), and severe food insecurity (6-7). A household roster included health conditions for all members of the household as reported by a household proxy. Descriptive statistics were computed using STATA 13.0, and multivariate models will be constructed to investigate independent predictors of poverty, food insecurity and poor health, and their interactions.

Findings: Of the 3382 eligible PRL and 1171 PRS households approached, 2,974 PRL and 1,050 PRS gave informed consent and completed the questionnaire (88% and 89% response rates respectively). 65% of PRL and 89% of PRS live under the poverty line while 3% of PRL and 9% of PRS are extremely poor. 62.2% of PRL and 94.5% of PRS are food insecure. Larger households with higher numbers of children as well as unemployment, low skilled employment, and low educational attainment of the head of household are associated with both poverty and food insecurity across PRL and PRS families. The prevalence of chronic illness is high and similar among PRL and PRS, with 40% of 19-59 year olds, and around 87% of older adults (above 60y) reporting a chronic disease. In addition to education and employment, we found crowding index, food insecurity and area of residence to be associated with chronic illness.

Interpretation: PRL and PRS are particularly vulnerable to poverty, food insecurity and chronic illnesses, all of which vary with similar socio-demographic markers; most notably employment and education. These results indicate the need for advocacy to increase employment rights and ensure continued access to education and health services for PRL and PRS living in Lebanon, particularly with the increasing limitations on job opportunities and pressures on the education and health sectors resulting from the Syrian crisis.

Word count: 464

6. Effects of posttraumatic growth and subjective well-being on cumulative trauma among aid workers exposed to war and violence in Palestine.

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Background Professional health workers (social workers, helpers, practitioners) operating in war-like conditions are at risk of experiencing feelings of stress, exhaustion and burnout due to their direct and indirect involvement in traumatic events. The Palestinian aid workers specifically faced increased levels of poverty and unemployment since the beginning of the second Intifada in 2000. In such contexts, professional helpers are frequently impacted by a similar type of trauma to that found in their clients.

Methods The present study used structural equation analysis (SEM) to model how distress in the aftermath of traumatic events influences subjective well-being (SWB) via the indirect effect of posttraumatic growth (PTG) in two groups of Palestinian professional helpers from the Gaza

Strip and West-Bank (n=201) and Israel (n=57). *Posttraumatic Growth Index* (PTGI-10), *Positive and negative affects-20* (PANAS-20), WHO-5 brief *wellbeing index* and *Impact of events scale* (IES-13) questionnaires were administered to test the hypotheses that cumulative trauma would be negatively and directly related to subjective well-being; levels of trauma would be positively and directly related to posttraumatic growth, and posttraumatic growth (PTG) positively and directly related to subjective wellbeing.

Findings The 76.1% of Israeli Palestinians and 88.6% of Palestinians had witnessed at least three traumatic episodes whereas the percentages of professional helpers exposed to at least 10 traumatic episodes were 47.8% and 60.1% respectively. The median number of traumatic events was 9 for Israeli Palestinians and 12 for the other sub-group. The data confirmed the moderate levels of traumatization in the helpers involved in this study. In comparison with data gathered in different contexts but with similar samples, professional helpers' mean GHQ-12 scores ($m=17.81\pm5.77$) were found to be uncommonly high. Concerning well-being (WHO-5), it may be concluded that 48.8% of helpers obtained a raw score of less than 50 indicating a state of "poor well-being" whereas 9.7% appeared to be in need of further investigation for depression symptoms under the ICD-11 criteria. Levels of positive affect ($m=26.6\pm5.98$) experienced by these Palestinian helpers were similar to those of a British non-clinical sample ($m=31.3\pm7.65$). Consequently, we set out to evaluate the plausibility of a structural model in which the direct effect of trauma on subjective well-being was mitigated by posttraumatic growth. The findings show that posttraumatic growth contributes to mitigating and buffering (in the order of approximately 10%). The standardized direct effect of trauma on subjective wellbeing ($\beta_{1,3} = -.53, p < .001$) showed that exposure to traumatic events had a negative effect on helpers' subjective wellbeing. The direct effect of trauma on posttraumatic growth ($\beta_{2,3} = .16, p < .001$) pointed out that posttraumatic growth was positively influenced by levels of trauma. Finally, the direct effect of posttraumatic growth on subjective well-being was .27.

Interpretation: The construct of posttraumatic growth contributes to explaining how helpers working in extremely dangerous conditions maintain good psychological functioning and ability to adjust the trauma in terms of perceived subjective well-being. Promoting PTG in emergency services contexts can enhance well-being and prevent psychological suffering in helpers exposed to war and violence.

Words count: 500

7. Burnout among workers in emergency departments in Palestinian hospitals: Prevalence and associated factors

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Abstract submitted by Motasem Hamdan on November 25, 2015 (mhamdan@staff.alquds.edu)

Background: Working in EDs entails high work pressure and stress due to witnessing human suffering and the unpredictable nature of the work. This environment puts personnel at risk of burnout. Burnout has important consequences for the health care provider, the patient, and the health care system. This analysis aims to assess burnout levels and associated risk factors among health workers in EDs in Palestinian hospitals.

Methods: Cross-sectional study conducted in 14 EDs, 8 from the West Bank and 6 from Gaza Strip hospitals. Data were collected using a self-administered questionnaire between July-September 2013. Data related to burnout was collected using the Arabic version of Maslach Burnout Inventory-Human Services Survey (Maslach & Jackson, 1981).

Findings: A total of 444 participants (response rate 74.5%): 161(32.0%) nurses, 142(32%) physicians, and 141(31.7%) administrative personnel. Results showed prevalence of high levels of burnout among EDs workers. About 64% of the workers suffer from high emotional exhaustion, 38.1% from high depersonalization, and 34.6% from low personal accomplishment. High levels of burnout was significantly prevalent among EDs workers in the West Bank than Gaza Strip (OR 1.917, CI 95% 1.044-3.521, p=0.036), and among workers aged ≤ 30 years old than younger colleagues (OR 2.4, CI 95% 1.285-4.482, p=0.006). No significant association between high levels of burnout and any of the other participant and organisational characteristics (gender, experience, education, hospital ownership, patient/work load) (p>0.05). Moreover, exposure to workplace violence (physical and non-physical) was significantly associated with high level of emotional exhaustion (OR=3.74, 95% CI 1.953-7.16, p<0.001), and high level of depersonalization burnout (OR=2.25, 95% CI 1.239-4.087, p=0.008). No significant association was found between personal accomplishment and exposure to workplace violence (p>0.05).

Interpretations/conclusions: High levels of burnout among workers in Palestinian EDs, especially clinicians are prevalent. Hospitals should implement professional education and training for ED workers to raise their awareness and to recognize the signs of burnout in order to reduce and prevent destructive consequences of care providers and patients. Moreover, hospitals should also employ strategies to manage violence and aggression of patients and companions against health care providers in EDs.

Word count: 342

8. Reducing dietary salt consumption in Palestine

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Abstract submitted by Enrico Materia on November 27, 2015 (emateria@libero.it;
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Background. In Palestine, noncommunicable diseases (NCDs) are on rise and account for a large part of the general mortality. The spreading of behavioural risk factors of NCDs, including unhealthy diet rich in salt, sugar and saturated fats, is boosted by societal changes, corporate practices and stressful daily life conditions linked to military occupation, poverty and unemployment. The World Health Organisation recommends a 30% relative reduction in mean population intake of salt/sodium as a very cost-effective policy option to reduce the burden of cardiovascular diseases, including myocardial infarction and stroke. Surveys estimate a salt consumption of 7 grams/day in Palestine, almost 50% higher than the recommended daily amount per person for adults. In the Arab countries, about 20% of the total salt intake comes from bread, an iconic food in Middle East culture as well as the single bigger contributor to salt intake due to its large consumption. In 2011, bread and cereals accounted for 16% of the average monthly household food cash expenditures. The content of salt in the bread in the West Bank was assessed through a survey in order to set the salt reduction target to be included in the food regulation drafted in June 2015 by the Palestine Standard Institute (PSI) according to the proposal of the Palestine Ministry of Health formulated with the technical assistance of the Italian Cooperation.

Methods. Trained personnel from the Environmental Health Department of the Ministry of Health visited 135 bakeries located in all the Health Directorates of West Bank during August 2015, and collected data on 281 bread products (11 different types) through a structured questionnaire regarding salt added to flour during bread preparation. The sample size was calculated for a level of accuracy of 7%. Data were analyzed using SPSS 17.

Findings. The average salt added to flour during bread preparation was 1.33 g/100 g of flour (SD 0.62; range 0-4.00), corresponding to 1.11 grams of salt for 100 grams of bread. The higher average content of salt in flour was reported in Jericho Governorate (1.78 gr/100 gr of flour; range 0.42-4.00), and the lower in Hebron Governorate (1.19; range 0.42-2.50).

Interpretation. A high variability of salt content in the bread was found in West Bank, partially related to the type of bread baked and to the type of flour. Based on the survey results, the PSI set the salt reduction target for 2016 at 1.3 grams of salt for 100 gram of flour, with a gradual reduction of 0.1 gram of salt per year in the next three years, in order to adjust consumers' palates to accept less salty products. The Nutrition Monitoring Committee of the PSI and the Public Health Central Laboratory of the Ministry of Health will be in charge to monitor the compliance to the enacted regulation, and the Palestine food producers association assured a full support. According to the available literature, Palestine is the first Arab country establishing a mandatory program for salt reduction in foods.

Word count: 491

9. Incidence and Survival Rate of End-Stage Renal Disease (ESRD) Patients on Hemodialysis in the West Bank-Palestine: a retrospective, longitudinal study.

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Abstract submitted by Esra' Al-Shiekh on November 11, 2015 (esra_alshaikh@yahoo.com)

Background: End-stage renal disease (ESRD) is a globally growing health care problem, with patients bound to lifelong renal replacement therapy (RRT); among which, hemodialysis (HD) remains the most common modality used worldwide. In this study we aimed at studying the annual incidence and the survival rate of ESRD patients.

Methods: A retrospective, longitudinal study was carried out in all HD units in the West Bank-Palestine (10 units). We had two sets of data; the first set (604 patients) included 'prevalent' cases that were on HD by the end of December-2010 and were retrieved from a preceding study entitled "Prevalence of ESRD patients on HD, in the West Bank-Palestine, December-2010". The second set of data (1071 patients) included 'incident' cases that were maintained on HD due to ESRD from the beginning of 2011 to the end of 2013.

After excluding pediatric patients (< 13 years old); and those who received transplantation or lost of follow up, 1523 patients were included in the survival analysis. The 1, 2, and 3-year survival rates were calculated by the direct method. Kaplan-Meier method was used to study the survival rate of HD patients in regard to the studied variables (age, gender, residence, and underlying cause). Cox proportional hazards model was applied to allow for time-varying covariates and prevalent data analysis.

Approvals were obtained from An-Najah University Institutional Review Board and from hospitals to use medical files, and data was treated with confidentiality.

Findings: The incidence of ESRD patients on HD in the West Bank between 2011 and 2013 was 133 patients per million population (pmp)/year. The highest incidence rate was in Ramallah (436.9 (pmp)/year) while the highest prevalence was in Jericho (934.4 pmp). There was a 40% increase in the prevalence of ESRD from December-2010 to December-2013. The 1-year survival rate was 71.2%, while the 3-year survival rate was 66.2%. Individual variables significantly influencing survival were the age of the patient at diagnosis (P value <0.05), and the underlying cause of ESRD (Pvalue <0.05).

Interpretation: Annually, the prevalence and incidence of ESRD are increasing significantly; with the highest mortality rate found to be during the first year of starting dialysis. Accordingly, a proper revision of the available health care system with implementation of preventative measures to decrease or delay progression of chronic kidney disease (CKD) to ESRD is needed. The retrospective nature of the study limited the ability to deduct more data

about ESRD patients in terms of patients` medical characteristics and the direct cause of death that are crucial for a more comprehensive assessment of HD effectiveness.

Word count: 423

10. Connection at any cost: Excessive Facebook use and physical & mental health risks in Palestine

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Abstract submitted by Samer Nazzal on November 25, 2015 (znazzal@najah.edu)

Introduction: Social media, with the release of Facebook in 2004, has gained popularity and changed the face of social interaction, especially among youth where alternative forms of socialization and leisure activities are limited. An important expanding market is in the Middle East, particularly Palestine where restrictions related to cultural and geopolitical realities create an environment of isolation for young adults. Despite the benefits of a low cost, accessible tool to promote social connectivity, it is suggested that dependence on social media will diminish motivation to participate in naturally occurring activities and life interests leading to physical and mental health risks.

The aim of this study was to assess the potential association between excessive Facebook use and physical health complaints, unhealthy habits and emotional discomfort (depressive, anxiety, and stress symptoms) among university students.

Methods: A cross-sectional design was used to study students at An-Najah National University (ANNU) of Palestine. The sample included 1003 students of mixed gender and area of study. A pretested self-administered questionnaire was used as a study instrument. Information on demographic data, Facebook utilization, Unhealthy habits related to Facebook use, physical health complaints, perceived academic success, and emotional discomfort (depressive, anxiety, and stress symptoms) was completed by each participant. The Facebook Intensity Scale (FIS) was used to measure Facebook usage and the Depression – Anxiety – Stress scale (DASS21) for evaluating the depressive, anxiety, and stress symptoms.

Findings: A total of 938 out of 1003 participants returned valid questionnaires with a response rate of 93.5%. Nine hundred and twenty two of them (98.3%) reported that they have accounts on Facebook, with a high utilization population identified (26% spending over 3 hours daily on Facebook) while 28.4% had over 300 Facebook friends.

A positive relationship was found between time spent on facebook, number of Facebook friends, and FIS scores and unhealthy habits related to excessive social network use including skipping meals, holding urination, late night and interrupted sleep use. Negative health consequences related to excessive use included eye strain, reduction in energy levels, reduction in frequency and duration of exercise, as well as back and wrist pain

Excessive Facebook use and having high number of Facebook friends was found to be related to emotional discomfort (depressive, anxiety, and stress symptoms); higher levels of use predicting higher levels of symptoms. Furthermore a significant association between scores on the FIS and perceived negative effect on educational performance was demonstrated.

Interpretations: The study presents evidence that excessive social networking online is associated with unhealthy habits and negative health effects in the student population in Palestine. Additionally, it may lead to increased risk for mental health symptomology and interfere with actual developmental tasks by negatively impacting academic achievement and other indicators of success for young adults. Public awareness and alternative opportunities for socialization and recreation are needed to combat this high risk health trend.

Word count: 469

11. Food consumption in relation to perceived stress and depressive symptoms: Findings from five universities and three colleges in Gaza Strip, Palestine

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Background: University/college period is one of the stressful stage of life, and depressive symptoms and stress are health problems among students worldwide. Understanding nutrition-mood associations may enable students to make healthier food decisions that lead to a healthier emotional state. The present study investigated the relationship between food consumption and stress and depressive symptoms among university/college students in Gaza strip, Palestine.

Methods: A cross-sectional survey was undertaken among undergraduates enrolled across 5 universities (Al-Azhar, Al-Aqsa, Palestine, The Islamic and Gaza universities) and 3 colleges (College of Applied Sciences, Palestine college of Nursing and Dar Al Dawa and Humanities College) in Gaza Strip (n=1409). Ethical approval was provided by the participating institutions. Self-administered questionnaires included a 12-item food frequency questionnaire, Cohen's Perceived Stress Scale and modified Beck Depression Inventory. Gender and university comparisons were performed. Univariable and multivariable regression analyses were computed for each of the two outcomes; perceived stress and depressive symptoms.

Findings: In general, females consumed sweets, snacks, fresh fruits and salad/raw vegetables and cooked vegetables more commonly than males, whereas males generally consumed fast food/canned food and cake/cookies, meat/sausage products, fish/sea food, cereal/cereal products and dairy/dairy products more commonly than females with differences across various universities/colleges. Perceived stress and depressive symptoms scores were generally higher among females than males. The univariable analysis showed that significant associations between various food groups and perceived stress and depressive symptoms were more evident for males. In addition, for males, all food groups were negatively associated with perceived stress as well as with depressive symptoms. For females, the exceptions of such negative associations were observed with meat/sausage products, fish/sea food and cereal/cereal products for perceived stress, and only with cereal/cereal products for depressive symptoms. The multivariable analysis indicated that frequent consumption of 'unhealthy' food such as sweets/cookies/snacks/fast food was significantly associated with lower perceived stress among males only. On the other hand, frequent consumption of 'healthy' foods such as fruits/vegetables was significantly associated with lower depressive symptoms, but for both sexes.

Interpretation: People in Gaza Strip are under tremendous and continuous stress due to the imposed Israeli siege since the year 2006 which affect all life aspects. Associations between consuming 'unhealthy' and 'healthy' foods with lower perceived stress and depressive symptoms, respectively among male and female students in 5 universities and 3 colleges in Gaza Strip suggest that interventions to reduce stress and depressive symptoms could result in the consumption of healthier foods and/or vice versa.

Word count: 403

12. Differences in tobacco use between refugee and non-refugee populations in Jordan, Lebanon, Syria and the West Bank: Cross-sectional analysis of the Global Youth Tobacco Survey

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Background: Tobacco use is prevalent among young people in several Middle Eastern settings, however little is known about how tobacco use patterns differ between refugee and non-refugee populations in the same country. This study aimed to explore whether refugee status is a determinant of tobacco prevalence and frequency in several Middle Eastern countries hosting Palestine refugees.

Methods: A secondary analysis of the Global Youth Tobacco Survey (GYTS) was conducted. GYTS is a cross-sectional, self-administered survey considered the gold standard for tobacco surveillance among school students typically aged 13-15 years. Standardised methodologies are implemented across countries to produce regionally- or nationally-representative data. GYTS participants are selected in a two-stage cluster design. Datasets used in this study were Palestine refugee populations from the UNRWA GYTS for Jordan, Lebanon, Syria and the West Bank (all conducted in 2008) and non-refugee populations from the national GYTS datasets for Jordan (conducted in 2009), Lebanon (2011), Syria (2010) and the West Bank (2009). The main outcome measure was current tobacco prevalence, defined as past-30 day cigarette or waterpipe use. Secondary measures were the number of cigarettes or waterpipes smoked per month. Population type (refugee or non-refugee) was used as an independent variable in adjusted log-linear regression models, which assessed the association between the prevalence of tobacco use, and the frequency of tobacco use, with the population type. Models were adjusted for the age and sex of survey respondents. Survey weights were used to account for the multi-stage design of the GYTS. Analyses were conducted on Stata 12.0 (StataCorp).

Findings: Current tobacco use was higher in refugee than non-refugee populations in Jordan (26.7% vs. 24.0%, respectively), Lebanon (39.4% vs. 38.5%, respectively), Syria (36.6% vs. 23.2%, respectively) and the West Bank (39.4% vs. 38.4%, respectively), however after adjustment for the age and sex of survey respondents, only significant differences in Syria was observed (AOR 1.63; 95% CI 1.11-2.41). In adjusted linear regression models, refugees in Lebanon smoked 63% (95% CI 0.23-1.05) more cigarettes per month, refugees in Syria smoked 40% (95% CI 0.19-0.61) more waterpipes per month, and refugees in the West Bank smoked 41% (95% CI 0.21-0.61) more waterpipes per month, than their respective non-refugee populations.

Interpretation: Tobacco use prevalence is higher in refugee than non-refugee populations in Syria, and refugee populations in Lebanon, Syria and the West Bank may use some tobacco products more frequently than their non-refugee populations. Ongoing tobacco surveillance is warranted and feasible, context-specific interventions for refugee populations should be developed.

Word count: 407

13. Settler colonialism as a political determinant of health in the occupied Palestinian territory (oPt)

Thurayya Zreik, Master's Dissertation for University of Oxford MSc in Medical Anthropology

Abstract submitted by Thurayya Zreik on November 29, 2015 (thurayya.zreik@gmail.com)

Background The ongoing Israeli military occupation of the West Bank, including East Jerusalem, and the Gaza Strip, has been a primary root of political violence. Taking the form of both warfare and policy, this political violence has been a significant determinant of health. This study examines how the characteristics of settler colonialism in particular, marked by its aims to eliminate an indigenous population to build and settle upon its land, have been associated with specific health outcomes in the oPt.

Methods The study assesses existing health data within the framework of settler colonialism acting as a political determinant of health. A review of the existing political and theoretical literature on settler colonialism, including literature from settler colonial studies, provided the framework and definitions. The study includes an assessment of qualitative and quantitative data from the oPt, as well as the *Lancet* series on health in the oPt. Health data is analyzed in light of the specific political economy of the oPt with reference to the settler colonial framework and available literature.

Findings Settler colonialism is a unique form of colonialism that is concerned specifically with the seizure and control of territory, and seeks to eliminate native societies and structures in order to replace them with a new colonial society. Elimination takes place through overt killing, but also through the exertion of control over the native population. Physical control in the oPt, such as the control of bodies through tightly regulated and discriminatory checkpoints, has undermined healthcare access, affecting, for example, maternal and child health, with a high number of births (and neonatal deaths) occurring at checkpoints yearly. Physical control is also exerted through controlling bodies by controlling health: the blockade on the Gaza strip, limiting food and medical aid, has led to a devastating nutritional and health situation, with infant mortality rising for the first time in decades. Subjective health measures also indicate a low quality of life, marked by reports of constant exposure to collective and individual violence and humiliation, with severe impact on community mental health, and with the population enduring high levels of social suffering related to war. Israeli military occupation exerts biopower in the form of outright violence aimed to control, but also necropower with elimination as a policy.

Interpretation The study suggests that, taking into account the ultimate goal of settler colonialism as the control and elimination of the native population, the undermined health status of Palestinians in the oPt is not only an outcome of the policies of the occupation, but is also a policy in itself; the intended outcome being a despondent population that is easier to control, thereby perpetuating settler colonial designs. Viewing settler colonial ideology as a framework

allows us to uncover the political determinants of certain health outcomes in the oPt. This will allow us to conduct health research more critically, and to develop health policies and interventions that can more effectively address the root causes of current health problems.

Word Count: 494

14. Movement restrictions and health status in the oPt: A retrospective cohort study

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Abstract submitted by Clea McNeely on November 30, 2015 (cleamcneely@gmail.com)

Background: Over 100 types of permits, over 600 physical barriers, frequent and arbitrary curfews, and physical detentions all severely restrict Palestinian movement in the oPt. Case studies have documented health impacts of these restrictions, including deaths and childbirths at checkpoints. This is the first representative study to examine the long-term association between movement restrictions and health status in the oPt.

Methods Data come from a representative sample of 1,778 adults aged 32-43 years from the West Bank (WB), East Jerusalem (EJ), and the Gaza Strip (GS) (response rate 97%). In 2011 the Palestinian Center for Policy and Survey Research conducted household interviews using an event-history calendar to collect annual information across 25 years (1987–2011). The analytic sample consisted of all person-years in which respondents had a serious medical problem *and* needed to travel for medical care (1,163 person-years from 246 respondents).

Functional limitations due to health was assessed in 2011 with the question, “How often does your physical health limit your ability to meet the other demands in your life such as financial, education, or family responsibilities?” Responses ranged from “never” (1) to “regularly” (5). *Self-rated health* was measured with the question, “In general, how would you describe your

health?” Responses ranged from “very poor” (1) to “very good” (5). Respondents reported for each year whether they were permitted to travel for medical care without a delay, were permitted after a delay, were barred, knew of closure/curfew/barrier so didn’t try, or found a way to travel even though they were not permitted. Control variables included region (EJ, WB, GS), time period (1987–1993, 1994–1999, 2000–2005, 2006–2011), number of years respondents needed to travel for medical care, and resource adequacy measured annually. Multivariate analyses were conducted using generalized ordered logistic regression.

Findings Respondents were barred from travel for medical care during 28.3% of the years (no differences across regions). They were allowed to travel only after delays during 35.2% of the years (43.7% WB, 8.7% EJ, and 21.2% GS). Compared to those permitted to travel without restriction, respondents who had all needed medical travel barred in a year had greater functional limitations due to health in 2011 (O.R.=3.69, 95% C.I.(1.42–9.57)) and poorer self-rated health (O.R.=0.25, 95% C.I.(0.08–0.73)). Those whose medical travel was delayed were 2.8 times more likely to report functional limitations due to health “sometimes” or greater compared to “rarely” or “never” (95% C.I. (1.21–8.01)). These associations did not vary across time period, gender, or levels of resource adequacy, although lack of statistical power limited the ability to test for some interactions.

Interpretation The health consequences of the widespread travel restrictions in the oPt suggest a pattern of collective punishment, which is explicitly prohibited by the international laws ratified by Israel, the occupying power. Change in the “back to back” ambulance policy and the granting of travel permits to pregnant women for longer than 2–3 days are short-term policy steps that could reduce the negative impact of the occupation.

Word Count: 497

15. Medical access for Palestinian prisoners in Israeli prisons and for ex-prisoners

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Abstract was submitted by Anita Vitullo on November 30, 2015 (vituloa@who.int)

Background: The right to health of Palestinian prisoners held in Israeli-run facilities is a major public health issue affecting several hundred thousand males, thousands of minors and hundreds of females since 1967. Non-governmental organizations describe living conditions of detainees and prisoners as being unhealthy due to the nature of their confinement, structure of the prisons

and policies of military and civilian prison management. No systematic studies have been undertaken to examine the nature and extent of health access in and out of prison for this group.

Methodology: A literature review was conducted of health access in various prison contexts. We selected 31 West Bank ex-prisoners from prisoner support groups' lists, stratified by sex, age, imprisonment length and release date, then chose randomly, for qualitative in-depth interviews. A standard health questionnaire was adapted for the context from examples in literature and field tested. Two focus group discussions were conducted with adult ex-prisoners and one unrecorded focus group with male minors. Interviews were recorded after signed consent, transcribed, and translated, with identities protected.

Data were initially coded according to 30 categories, then categorized into 8 main subject areas with multiple subcategories: personal data; length and frequency of arrest/imprisonment/interrogation; events, conditions and injuries during arrest and interrogation and treatment; pre-arrest health status; medical access during imprisonment; living conditions in prison; post-prison access to health care and mental/physical health problems; and recommendations to the Palestinian Ministry of Health regarding health care.

Preliminary results indicated that while a number of ex-prisoners had a high opinion of Israeli health care when it was available, most respondents expressed multiple barriers to health access, including extended waiting times, inappropriate health personnel, lack of physical exams, poor communication, inadequate information about status and medications, and self-reported systematic incidents of mistreatment and abuse that degraded health status and restrained health-seeking behaviors. Deterrence due to negative experiences was a major factor hindering health-seeking. Ex-prisoners also encountered barriers to health access, including inaccessible mental health and dental care due to cost or unavailability, and inadequate communication and treatment by health providers. Referral care in Jerusalem was difficult. Key informants are being consulted to validate interpretations.

Discussion: The data supports a hypothesis that structural problems of occupation policies discourages health-seeking by Palestinian prisoners. Prisoners with injuries face particular health risks in prison. The impact of prison conditions and poor reintegration into society post-prison have particular mental health consequences on ex-prisoners.

Findings can inform right to health advocacy with Israeli duty-bearers to remove health access barriers by ensuring independence of health care from prison and military authority, and to improve treatment in prison, and post-prison with Palestinian health providers to provide free and better targeted services for ex-prisoners, especially mental health and dental care, and specialized referral care.

Word count: 454

16. Violence in the Arab Palestinian society in Israel

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Abstract submitted by Ahmad Sheikh Muhammad on November 30, 2015 (ahmad48@gmail.com)

Background: Violence is a pattern of hostility expressed by attempts to dominate through physical, verbal or emotional aggression by the strong partner in a relationship. Research data show a definite rise in the prevalence of violence in the Palestinian society in Israel. Violence is a great challenge for the Arab society, considered a traditional society, and therefore a variety of coping strategies may be seen, ranging from plain denial of the violence due to the will to defend privacy and unity in the family, through the expression of understanding, some degree of conformity and even agreement with the violence and ending in the use of legal instruments to take care of this problem and its underlying causes. This survey is the first of its kind to examine the prevalence of violence, its correlates and coping patterns among mainstream members of the Arab Palestinian society in Israel.

Methods: The survey included 1775 households located in 55 different Arab localities. An ad hoc questionnaire was filled face-to-face by a team of trained interviewers at the home of the subjects, who were husbands, wives and an additional single member of the family (age 18-40) living with the family. The questionnaire included demographic information, socio-economic information, type of relations and stresses, domination patterns in the family, expressions of domestic and society violence, perceived causes of the violence and ways to cope with it. Response rate was 85.8%.

Findings: 9.3% of Arab households reported that one of their members or all the family had been a victim of violence; 44.3% of them did not report the event or complain to anyone. 47.7% of the subjects reported witnessing cases of violence during their lifetime and the most common cases being persecution and hitting. 60.5% of the men and 38.1% of the women in the 18-44 age group were witnesses to cases of violence in their surroundings. The main causes of violence were unemployment and frustration, the economic conditions in which they live and drugs or alcohol consumption. The majority of cases of persecution occurred in the neighborhood, while most cases of physical violence occurred outside of the neighborhood although still in the same locality. The most important causes of violence in the Arab society, in the eyes of the Arab participants in this study, are frustration and stress that are a product of the low standards of living in general, the feeling of oppression and discrimination by the Israeli establishment, and a feeling of lack of identification with the state (63.4% - 88.6%).

Conclusion: Violence in the Arab Palestinian society in Israel is a complex and wide spread occurrence that demands the joint efforts of the state, policy makers, professionals and different organizations in order to reduce its prevalence and take care of its consequences. The findings of

this survey may be used as a basis for planning of a general program that will take all the players into consideration and will be able to create a long-term plan.

Word count: 493

17. Infant and neonatal mortality among Palestine refugees in Gaza – a follow-up cross-sectional survey

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Abstract was submitted by Camille Vernoooy on November 30, 2015 (C.VERNOOY@unrwa.org)

Background The United Nations Relief and Works Agency for Palestine refugees in the Near East (UNRWA) has periodically estimated infant mortality rates (IMR) and neonatal mortality rate (NMR) among Palestine refugees in Gaza. These surveys have recorded a decline from 127 per 1000 live births in 1960 to 20.2 per thousand in 2008. Thereafter a rise in IMR was document to 22.4 per 1000 live births in the 2013-survey and this change reflected a statistically significant increase in neonatal mortality (from 12.0 in 2008 to 20.3 in 2013). Alerted with the findings, we decided to conduct a follow up survey in 2015, instead of waiting for the next survey in 2018, to assess the situation and trend.

Methods We used the same preceding-birth technique as in previous surveys. All multiparous mothers who came to the 21 UNRWA health centres to register their last-born child for immunization were asked if their preceding child was alive or dead. We based our target sample size on the IMR in 2013 survey and included 3126 mothers, from August to November 2015. Data was collected on 3168 preceding children. Age at death was categorized as early-neonatal (≤ 7 days), late-neonatal ($8 \leq 28$ days), and post-neonatal (> 28 days-1 year).

Findings The data analysis is still ongoing, therefore we here present the preliminary results. The reference time to which the mortality rates reflect is December 2013 to February 2014. The preliminary results show that the Infant Mortality Rate (IMR) was 23.7 per 1000 live births. Neonatal Mortality Rate (NMR) was 17.9 per 1000 live births. Of the 69 infant deaths, 55% died

in early-neonatal period, 20% in late-neonatal period and 24% in post-neonatal period. The main causes of infant deaths were congenital malformations or metabolic disorders (41%), prematurity (25%) and infection (16%).

Interpretation The preliminary results of this survey confirm that infant mortality rates are potentially continuously rising among Palestine refugees living in Gaza. Although, neonatal mortality declined since the 2013-survey it is still much higher than in 2008. Three quarter of the infants died in the neonatal period suggesting that efforts should be made to improve health care for newborns. Together with other stakeholders, UNRWA will continue to work on this.

Word count: 363

18. Stalled mortality decline in the Gaza Strip? Evidence from a population-based household survey

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Abstract submitted by Marwan Khawaja on November 30, 2015 (khawaja@un.org)

Background: This study examines recent trends in neonatal and infant mortality in the Gaza Strip, using birth history data from the 2014 Palestinian Multiple Indicator Cluster Survey (MICS). A recent study using facility based data and indirect estimation method shows an increased neonatal mortality among refugees, confirming earlier unpublished evidence that neonatal mortality increased in Gaza from 1995 to 2006, and the increase (in both neonatal in infant deaths) was due to conflict. Recent population based data provides a good opportunity to examine trends and causes of the increase in neonatal mortality among the general population and in more detail than previously established.

Methods: The study was based on data from the 2014 cross-sectional MICS survey. The sample included face to face completed interviews with 11,125 (un-weighted) households and 13,967 women aged 15 to 49 years. Response rates for both households and women were high at 96%. Our subsample included ever-married women aged 15-49 with complete birth histories. The outcome variable was timing of death before reaching one year of age and before reaching one month of age (actually 28 days) for live births. Descriptive analysis and proportional hazard statistical models were used. Assessment of data quality of all available survey data was carried out to show consistency in reporting, and in order to rule out trends caused by data collection problems in the recent survey. Our main variable of interest is conflict intensity measured by number of Palestinian killed by month. Relevant covariates were used including year (to examine trends), sex, twin status, cousin marriage, birth spacing, residence, mother's education, and water supply.

Findings: Neonatal and infant mortality was 12 and 20 per 1000 births in Gaza during the 2010-14 period – and these rates were lower than those reported in the UNRWA facility survey.

Findings from proportional hazard models and data from the 2014 survey showed that infant mortality declined significantly during the 1990s, stalled during the early 2000s and increased significantly more recently. Such a reversal in mortality trends remained significant after adjusting for common risk factors and other socio-demographic characteristics.

Implications: The results are important for the design of specific interventions that may mitigate the negative impact of war and economic hardship on child survival.

Word count: 168

19. Attack on a hospital in the Gaza Strip

Julie Webb-Pullman (Human Rights Consultant), Yousef Al Rantisi, Tawtheq Independent Commission for the Documentation of War Crimes; Ihab Sa'di Kuhail, Tawtheq Independent Commission for the Documentation of War Crimes; Mohammed Al Sersawi, Ministry of Health; Althaer S Alsosi, Ministry of Health; Majdi Marwan Abu Hasira, Ministry of Health.

Abstract submitted by Julie Webb-Pullman on November 29, 2015 (jwebbp@gmail.com)

Introduction: Article 8(2) of the *Rome Statute* describes “war crimes” as grave breaches of the Geneva Conventions of 12 August 1949, including: wilful killing; wilfully causing great suffering or serious injury to body or health; and extensive destruction of property, not justified by military necessity and carried out unlawfully and wantonly. Article 18 of the Fourth Geneva Convention provides protection for civilian hospitals and their staff. Additional Protocol 1 expands protection for civilians and civilian medical workers, while Additional Protocol 2 strengthens protection of the wounded and of medical personnel.

Al Aqsa hospital is a 190-bed government hospital in Middle Gaza. On July 21-22, 2014 it was hit by several Israeli military strikes. The hospital was fully operational at the time, with a large number of wounded victims and inpatients, and hundreds of civilians from surrounding areas who had converged on the hospital seeking safety in its buildings and grounds.

Method: Descriptive survey of damage, deaths, injuries and attitudes towards the Israeli attacks on Al Aqsa Hospital. Site visits were undertaken during ceasefires, and photographs taken. Convenience sampling of persons at or near the hospital during the attacks was utilised, and informed consent obtained for interviews and photographs of injuries. Reasons for refusal were recorded. 26 participants consented to interview: 13 staff members, 2 patients, 3 relatives visiting patients, 5 displaced persons, 1 family member of a displaced person, 2 neighbours of the hospital.

Findings: Three deaths, 70 injuries including to 11 medical staff, and destruction and damage to buildings, equipment, and ambulances resulted. All refusals cited fear of Israeli reprisals. All participants reported no resistance presence or activity in the hospital, its grounds, or in the area before or during the attacks. 10 participants were injured in the hospital attacks: 7 staff members;

2 family members of patients; and 1 anaesthetised patient on the operating table. 21 believed the attacks were deliberately directed at the hospital. 7 staff reported the Red Cross attended: delays and dissatisfaction with their performance were noted. 12 of the 13 staff reported high levels of concern about future safety of medical staff. 20 participants reported they no longer feel safe anywhere. 8 considered the attacks demonstrated the international community and/or international humanitarian law does not provide protection to Palestinian hospitals and medical workers.

Interpretation: The absence of resistance activity indicates the attacks on Al Aqsa hospital on July 21-22, 2014 were not justified by any military objective, and were not incidental strikes by wayward fire, but the deliberate and sustained targeting of a civilian hospital. The strike while Red Cross personnel were present, and after they had communicated with the Israeli authorities, confirms this. The attacks were in clear breach of the Geneva Conventions, thus constitute war crimes. Failure to hold Israel accountable for the deaths, injuries and psychological sequelae, particularly fear and loss of faith in international instruments and organisations, both undermines credibility of international law, and has significant implications for the safety of civilians, medical staff and facilities in future conflicts, everywhere.

Word count: 500

20. Description of typhoid fever cases in Yalda, Syria.

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2. Dr Tayseer Sabbagh, MD, UNRWA Syria Chief Field Health Programme
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Abstract was submitted by Camille Vernooy on November 30, 2015 (C.VERNOOY@unrwa.org)

Background Despite the ongoing armed conflict, the United Nations for Relief and Works Agency for Palestine Refugees in the Near East (UNRWA) continues to provide primary health care services to 500,000 Palestine Refugees in Syria. In Yalda, which is close to Yarmouk, UNRWA provides health services whenever accessible. During the summer of 2015, increased number of typhoid fever cases started to emerge in Yalda. The aim of this research is to assess the emergence of typhoid cases fever among Palestine Refugees in Yalda.

Methodology From August 18th to September 23rd 2015 a descriptive research on cases series was conducted on all the patients (n=2250) presenting infectious diseases symptoms in UNRWA Yalda Health Point. For patients who had symptoms suggestive to typhoid fever, we recorded their age, the onset of fever and symptoms like headache, abdominal pain, fatigue, diarrhoea and/or changes of tongue. We also conducted a Widal test. Because of the security concern, we were unable to conduct stool culture. The data was collected by trained UNRWA medical staff in the Yalda Health Point and sent to UNRWA Health Department Head Quarter for analysis.

Findings From August 18th until September 23rd, 2015, Yalda Health Point was open for 10 times. In total, 90 cases of typhoid fever were reported, which were equivalent to 56% of last year total cases (n=162). The 90 cases were also the 6% of the total of infection cases in Yalda.. Normally, typhoid fever is quite uncommon in Syria. The median age of the 90 cases is 33 years old with a wide distribution between 8 years to 66 years. The cases reached a peak between August 24th and August 27th (n=17). However, with the collective efforts at Yalda to improve hygienic conditions like water chlorination, the number of cases declined by the end of September (September 21st, n=1).

Interpretation Increased number of typhoid fever was reported. This is probably due to lack of regular food supplies, clean water, health care, electricity or heating fuel. While we managed lower the number of Typhoid fever cases, accessibility and security challenges in Yalda remains main concern. However, with the implementation of the hygiene campaign and water chlorination, the emergence of Typhoid Fever was controlled in order to reduce the burden on the Palestine Refugees in Yarmouk, Syria.

Word count: 379

21. Youth organizing in Palestine: Is it ‘ALL about the money that comes ...’?

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Abstract was submitted by Yoke Rabaia on November 30, 2015 (ymeulen@birzeit.edu)

Background Young people (15-29) represent roughly 30% of the population in Palestine. The continuing Israeli military occupation and siege, a failing economy, high unemployment, and a state structure that offers little in terms of security are the context in which young Palestinians are to build their lives. As part of a larger comparative study examining youth inclusion/exclusion in six South-East Mediterranean countries, we studied the various types of youth organization available to young Palestinians and the perspectives of organizational employees as well as youth membership vis-a-vis these types of youth organization.

Methods A Birzeit University team of two female researchers based at the Institute of Community and Public Health conducted qualitative research, including: a review of the literature on Palestinian youth organizations; in-depth key informant interviews with staff of youth organizations; interviews and focus group discussions with members of youth organizations; as well as ethnographic observations of events involving youth organizations. An iterative sampling strategy and continuous comparative analysis were used to challenge and fine-tune findings as the research proceeded over a period of roughly one year, starting March 2015 and ending March 2016. Atlas-ti software was used for data management and coding in support of the analysis.

Findings Four main types of organization were identified: (1) organizations related to either the Palestinian Authority (PA) or specific political parties; (2) non-governmental organizations (NGOs) whose projects depend largely on international funding; (3) NGOs depending more on local resources; and (4) unconventional youth initiatives such as for example, the weekly protests against the Apartheid Wall. Comparing these, we found that the PA's and political parties' engagement with young people appeared largely geared towards the parties' rather than the young people's interest. Internationally-funded NGO projects, in turn, tended to be short-term, donor-driven, and geared towards middle-class youth, and were often not taken seriously by young Palestinians: *"It's all about the money that comes"* NGO initiatives based on local resources seemed more sustainable and more trusted by young people, but limited in what they can provide. Young Palestinians are also creative in developing and implementing their own initiatives, some of which are described in this paper.

Interpretation The discrepancy between available financial means and the type of projects and programs based on young Palestinians' interests must be taken seriously in order to avoid waste of valuable resources. More effort must be invested in strong long-term partnerships based on trust and respect between international financing bodies, local organizations and smaller Palestinian youth initiatives. In working together, in open dialogue, effective synergetic ways of interaction can be identified for the development of a youth organizational sector that is both trusted and constructive to Palestinian youth's needs.

Word count: 441

22. Documenting 'Good Practices' in adolescent programming for the MENA region: Interventions for Palestinian youth

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Shadi Jaber, Palestinian Counseling Center: Youth Empowerment Program

Melek El Nimer, United Lebanon Youth Project: Bridge

Rania Bikhazi, ILO: Know Your Business

Maysoun Obesidi, Unicef, SOP: Child Friendly Spaces

Abstract was submitted by Rima Afifi on November 30, 2015 (ra15@aub.edu.lb)

Background Young people (10-24 years old) comprise an estimated 122.4 million people in the MENA region - 28 % of the population. Several socio-demographic trends affect young people, including high unemployment and exposure to conflict/ war. Gender and other inequities remain significant barriers to wellbeing. Youth agency, however, is flourishing. Youth are assets to their communities, and have engaged positively with these circumstances to craft creative solutions. The State of Palestine has one of the most youthful populations regionally: 33% of its population is aged 10-24 years old. The youth unemployment rate is 38.3 %; the rate for females is about one third higher than that of males. Palestinian refugees outside Palestine also face similar harsh realities.

Despite many programs being implemented with/for youth in the region, few have been evaluated for effectiveness. Evidence-based approaches are needed that allow youth to achieve their full potential and grow and thrive. With the aim of identifying such interventions, UNICEF- MENARO commissioned the Center for Public Health Practice (CPHP) at the Faculty of Health Sciences, AUB to undertake a documentation of good practices in adolescence in the areas of (i) health, (ii) civic engagement, (iii) resilience, and (iv) skills development.

Methods The process of documenting the Good Practices included: (i) Identification of adolescent (12-24 years) programs globally and in the MENA region; (ii) Rating of every program by the CPHP team using eight criteria: Effectiveness, Sustainability, Replication, Equity Analysis, Evidence-base, Innovation, Values Orientation, Youth Involvement. Programs that met criteria were judged as ‘potential good practices’; (iii) For these programs, an in-depth interview was conducted with program implementers to validate the judgment and collect additional data. (iv) If the interview confirmed the judgment, the program was written up in a standardized template. The write ups were subsequently edited by the programs and approved. An advisory committee guided the process above. Youth were engaged in this process mainly through a Facebook page requesting their recommendations for good practices.

Findings A total of 222 programs were identified through phase 1 above, but only 22 were retained as good practices: 12 in skills building, 5 in health, 3 in civic engagement, and 2 in resilience. Of the 22 good practices, 81% were non-United Nations programs and 48% were from the MENA region. Good practices shared 13 overarching ‘elements of success’ including being based on a documented need, engaging a variety of stakeholders, creating ‘safe spaces’, and being flexible. Five of the documented good practices were either based in Palestine (2) or working with Palestine refugees outside Palestine (1) or included Palestine as one of several countries (2). The presentation will describe the process and analytical findings related to the

documentation of ‘good practices in adolescent programming’ and highlight the Palestinian examples.

Interpretations The findings and analysis presented in this report suggest a variety of recommendations, which cover two categories: (1) best bets for success for implementers, decision makers and policymakers; and (2) recommendations related to the next steps in documentation of good practices.

Word count: 497

23. Blood lead level among Palestinian schoolchildren: A pilot study

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Abstract was submitted by Ansam Sawalha on November 25, 2015 (ansam@najah.edu)

Background: In Palestine, chronic exposure to lead has not been adequately addressed as a problem for children.

Methods: To assess the exposure of Palestinian schoolchildren, we surveyed blood lead levels in 3 schools in Nablus city and collected demographic and clinical data.

Findings: Blood samples were collected from 178 children (140 boys, 38 girls), age range 6–8 years. The overall mean blood lead level was 3.2 (SD 2.4) µg/dL, and 4.5% of children had levels above 10 µg/dL. Blood lead levels were significantly higher among children living in refugee camps near industrial/high traffic regions than among children living in residential areas of the city. Blood lead levels were positively correlated with family size ($r = 0.15$) and negatively correlated with household area ($r = -0.18$).

Interpretation: Blood lead levels among these Palestinian schoolchildren were higher than those of others countries where leaded gasoline has been banned and seemed to be higher in more economically deprived children.

Word count: 157

24. Breast milk lead levels in three major regions of the West Bank of Palestine

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Background: Today's rapid industrialization and urbanization have significantly increased human exposure to environmental pollutants. Lead is a neurotoxicant with known serious health related problems, especially in children. This heavy metal is widely spread in our surrounding environment. Breast milk is the recommended form of enteral nutrition for all infants, including preterm infants. Human breast milk contaminated with lead poses potential risk of exposing recipient infant to this neurotoxic heavy metal. The primary aims of this study were to: a) evaluate the breast milk lead levels in breastfeeding mothers in three major regions of the West Bank, and b) to investigate the effects of sociodemographic variables on the breast milk lead levels.

Methods: This study was conducted in a cross-sectional design. Breast milk samples were collected from 89 breastfeeding mothers from Nablus, Ramallah and Jerusalem regions in polyethylene tubes previously incubated in 10% nitric acid. The ethics and protocol of this study were approved by the institutional review board of An-Najah National University. Samples collection protocol was also approved by the Ministry of Health. Breast milk lead levels were quantified using a previously validated graphite furnace atomic absorption spectrophotometric method. Breastfeeding mothers were interviewed and their sociodemographic variables were collected using a standard questionnaire.

Findings: The median breast milk lead level was 4.0 µg/L, ranging from 2.0 to 12.0 µg/L. Breast milk lead levels in 19.1% of the samples analyzed were higher than the World Health Organization's (WHO) safety limits for occupationally unexposed population. Breast milk lead levels were significantly higher in breast milk obtained from mothers who resided in refugee camps and cities than those obtained from mothers who resided in villages ($p < 0.01$). Breast milk lead levels were also significantly higher in breast milk samples obtained from mothers

with lower monthly household income ($p < 0.05$), lived close to paints shop ($p < 0.05$), lived in a house with peeling or chipping paint ($p < 0.05$), worked in agriculture ($p < 0.05$), spent more than 3 years working in agriculture ($p < 0.01$), and used eye kohl ($p < 0.01$). Multiple linear regression analysis showed that using eye kohl was a significant ($p = 0.039$) predictor of higher breast milk lead levels above the WHO's safety limits.

Interpretation: In this study, breast milk lead levels were higher than the WHO's safety limits for occupationally unexposed populations. In the Middle East, the major sources of lead are smelters, battery factories, radiator repair shops, unleaded fuel, eye kohl, leaded paints, flour from traditional stone mills, and the occasional burning of wastes. In this study, using eye kohl was a significant predictor of higher breast milk lead levels than any other sociodemographic variable. Previous studies showed that some eye kohl manufactured in countries with loose industrial regulations contain significant amounts of lead. Health authorities need to implement measures to eliminate or reduce exposure to lead.

Word count: 474

25. The quality of reports of medical and public health research from Palestinian institutions: A survey

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Abstract submitted by Loai Barqouni on November 26, 2015 (lnb6des@hotmail.com)

Background There has been an encouraging rise in reports of medical and health research from Palestine over the past decade, but the quality of these reports has not been assessed. We present here preliminary findings of an assessment.

Methods We searched the MEDLINE and Scopus databases for medical and public health reports from Palestine published between January 2000 and August 2015 inclusive. We included

original publications authored by researchers affiliated with Palestinian institutions if they reported research on humans concerned with understanding human health or healthcare. International guidelines were used to assess the quality of reports. The quality of reports was classified by the total percentage of items in the guideline which had been adequately addressed: low (< 30%), moderate ($\geq 30\%$ and <70%) or high ($\geq 70\%$).

Results We identified 2383 reports, and included 880 (778 reporting quantitative and 102 qualitative research). The main reasons for exclusion were (i) the research question was not a human health- or healthcare-oriented, or did not include humans (934; 62%); (ii) no authors affiliated to a Palestinian institution (492; 33%); and (iii) the report was a duplicate or unoriginal (77; 5%). We analysed the first 100 eligible reports identified, arranged in alphabetical order by the first author. The median number of co-authors was 4, and 78 of the first authors were affiliated to Palestinian institutions. Forty seven reports had international or regional coauthors. Sources of financial support were declared in only 34 reports. Most reports (85) presented observational analyses. As judged by the STROBE guidelines, 49 (58%) of these reports were classified as of low quality, 31(36%) as of moderate quality, and 5(6%) as of high quality. The most frequently inadequately addressed items were failures to (i) report study design in the title or abstract (67%); (ii) describe efforts to address potential sources of bias (98%); (iii) explain the basis for the study size (88%); (iv) report the numbers of individuals at each stage of the study (95%); and (v) failure to discuss study limitations (79%).

Interpretation When complete, this review will assess the quality of reports of medical and public health research from Palestine. Based on our initial findings, the quality of reports is well below an acceptable level. International reporting guidelines should be used to guide research design and improve the quality of reports of research.

Word count: 383

26. Causes, determinants and trends in maternal mortality among Palestine refugees during 2005-2014

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2. Dr. Majed Hababeh, MD, UNRWA Chief health protection and promotion
3. Dr. Ali Khader, MD, UNRWA Health Policy and Planning Officer
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Abstract was submitted by Camille Vernoooy on November 30, 2015 (C.VERNOOY@unrwa.org)

Background The United Nations Relief and Works Agency for Palestine Refugees in the Near East (UNRWA) has for over 60 years provided comprehensive primary health care to over five million Palestine refugees in five fields of operation: Gaza, Jordan, Lebanon, Syria and the West Bank. Although UNRWA has experienced various operational challenges such as political instability, war and chronic poverty, it has successfully maintained high standards of maternal health care supported with subsidy of delivery in local hospitals. The purpose of this study is to analyze causes of maternal mortality deaths and certain variables, such as: age, parity, and number of antenatal visits at death, place of death, type of delivery, birth outcome and cause of death

Methods Surveillance of maternal mortality for all women registered in UNRWA antenatal care programme is an integral part of the maternal health care. Each maternal death is investigated and documented by a health team using the Confidential Enquiry Reports. This study represents a data analysis obtained by reviewing reports for 183 Maternal Mortality that were submitted from UNRWA's four fields of operation (excluding Syria) from 2005 – 2014. The analysis comprises the study of the effect of each factor such as: age, parity, and number of antenatal visits at death, place of death, type of delivery, birth outcome and cause of death on maternal mortality.

Results From 2005 – 2014, there were 183 reported maternal mortality (MM), out of 952,544 registered pregnant mothers and of them 806,071 have live births. The average MM ratio was 22.7 per100, 000 live births over the 10 years of period. There are no significant declines of MMR during the period. The majority of MM occurred in hospitals and during the post-partum period, of 183 MM 22 took place during pregnancies, 56 during the course of delivery, and 105 occurred during post-delivery. The main cause of MM were Pulmonary Embolism (n= 46, 25.3%), followed by Hemorrhage (n= 36, 19.8%), Septicemia (n= 15, 8.2%), Heart Disease (n=12, 6.5%), Eclampsia (n=7, 3.8%), Acute Respiratory Distress Syndrome (n=5, 2.7%). The results have shown that the MM increased considerably with the age of mother and with the higher parity. The majority of deaths, 80% had received 4 or more antenatal visits. There was a shift in the leading documented causes of maternal deaths from pre-eclampsia and hemorrhage to pulmonary embolism.

Discussion Despite high utilization of good quality antenatal care and a high proportion of deliveries occurring in hospitals, maternal deaths still occur among Palestine refugee women. The proportion of deaths attributed to pulmonary embolism may be misleading and could point to problems with quality of intra and post - partum care.

Word count: 437

27. Association of maternal weight Gain during pregnancy with newborn weight and pregnancy outcomes in Tulkarem city and camps.

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Abstract submitted by Souad Belkebir on November 29, 2015 (souadbelkebir@najah.edu)

Background: The amount of gestational weight gained (GWG) is a key determinant for both mother and child pregnancy outcomes. The actual evidence shows strong associations between excessive GWG and: Low (LBW) or high birth weight (HBW), Preterm delivery (PD), Gestational Diabetes Mellitus (GDM), Pre-eclampsia (PE), Cesarean Section (CS) and Postpartum hemorrhage (PH). The main objective of this study is to determine the relationship between GWG with the mentioned outcomes.

Methods: A Retrospective cohort study has been carried out in Tulkarem City at Primary Health Care Center (PHC) of Palestinian Ministry of Health and in 2 United Nations Relief and Works Agency (UNRWA) PHC centers (Tulkarem and Nourshams Camps). 771 files were revised and the following variables were considered: Socio-demographic data, obstetrical and medical history and complications, BMI, and GWG. Descriptive, analytical and multivariate analysis were performed using The Statistical Package of Social Sciences (SPSS) v 20. Significance was considered at p value < 0.05.

Findings: Of the 771 patients included, 326 (42.3%) were from Tulkarem City, 274 (35.5%) from Tulkarem Camp and 171 (22.2%) from Nourshams. The mean age of mothers was 26.5 years (SD=5.81), 42.8% of them under the age of 25. Regarding level of education, 42.5% were tertiary educated, 34.7% university graduates and 22.8% finished primary or secondary education. The majority of them (44.2%) had a normal BMI at first visit, while (3.8%) were underweight, (32.9%) overweight and (19.1%) obese. Using Institute of Medicine (IOM) Weight Gain Recommendations for Pregnancy, 35.7% of mothers gained weight less than recommended, 36.7% within recommended and 27.6% more than recommended. The incidence of CS was 27.2%. For PD, GDM, PE and PPH, the incidence was 8.9%, 5.6%, 1.7%, and 10.2%, respectively. Regarding newborns, 52.5% were males and 47.5% females, with an

overall mean weight of 3,313 gr (SD=511.83). 37 (4.8%) neonates had LBW and 60 (7.8%) HBW. The bi-variate analysis showed a significant association between GWG and BMI at first visit ($p < 0.001$). Residency, age, education and parity were not found to be statistically associated with GWG status while HBW and PH were ($p < 0.001$). As a result of the multivariate logistic regression, women who gained above recommendations had a higher risk of having a baby with HBW (OR= 3.4, CI= 1.65 – 7.00) while women who gained less than recommended had a lower risk to develop PPH (OR= 0.44, CI= 0.199 – 0.996). No other associations were found significant.

Interpretation: Gaining weight during pregnancy more than recommended increases the risk of PPH and HBW, which is consistent with the international literature. It is, therefore, of crucial importance to determine a woman's body mass index at the initial prenatal visit and provide the appropriate counsel regarding the benefits of appropriate weight gain, nutrition and exercise. An individualized care to limit excessive weight gain will help in achieving the best pregnancy outcomes.

Word count: 468

27. Age of despair or age of hope? Older Palestinian women's perspectives on health in midlife

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Abstract submitted by Doaa Hammoudeh on November 2, 2015 (dshammoudeh@gmail.com)

Background: Globally, women's experiences and understanding of health in the transition from reproductive to post-reproductive ages are understudied. Evidence is focused on high income settings, and little is known about women's perspectives in the Palestinian context. This knowledge gap is reinforced by quantitative data collection efforts, which tend to focus on women of reproductive age. This study adds to our understanding of Palestinian women's midlife experiences, looking beyond reproduction and childbearing. It focuses on the ways in which older Palestinian women understand, explain and manage their midlife health.

Methods: 35 women aged 40-55 were interviewed in-depth using a life-history approach. Participants were sampled purposively to maximise heterogeneity. They include women living in the north, south and central West Bank, and women living in rural, urban and camp settings with diverse economic and social conditions. Ethical approval was obtained from Birzeit University and the London School of Economics. We analysed women's verbatim narratives to identify key themes and subthemes.

Findings: Many women articulated a positive view about ageing and midlife as a natural process. Perspectives were often linked with their own mothers' experiences, the main source of knowledge about the menopause. Women reported a combination of indigenous and biomedical knowledge and practice, often beginning with popularized medical practices and herbal remedies. While most women recognize faith and *tawakul* (reliance on God) as ways of coping with ill health, they also emphasize the need for physical activity and nutritious *baladi* (locally grown, native, organic, chemical-free) food, often romanticised as part of a generational past.

Good health was conceptualized as a combination of physical well-being, indicated by effortless movement and a relaxed psychological state of mind (*raha nafsiyeh, hadat al-bal*). In times of hardship, health issues were often connected to life events, and for those women with children they appeared to provide a protective effect in coping. Local idioms of health, including *hamm* (worry, disquiet, upset, uneasy, grief, anxiety, sorrow, affliction), *za'aal* (a combination of feelings including anger, distress, frustration, grief, incapacitation, worry, and sorrow), *nakad* (distemper, bitterness, disturbing, troubling and somber), and *istislam* (resignation, giving in) characterized women's descriptions of ill health. Exposure to political violence, living in fear and economic hardship were widely understood as impacting mental and physical health.

Discourses surrounding women's experience of this transition included 'age of despair', 'age of hope' and 'age of power'. Some women referred to this period as literally the cessation of menstruation (the menstrual cycle as having '*split from her*') or that 'aging has entered' (*el-kabar 'abar*). While value laden, it is important to recognize that not all women feel as the words indicate. 'Age of despair' was often ridiculed but still used by women for ease of reference.

Interpretation: Despite wide variation in circumstances (place of residence, marital and socio-economic status), women's narratives are underpinned by consistent perspectives as to what good health entails. Our analyses reveal the pluralistic approaches that older Palestinian women take towards health, and the need to better understand women's health outside of their reproductive years.

Word count: 498

28. Perceptions of elective abortion among Palestinian women: Religion, culture and access in the occupied Palestinian territories

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Abstract submitted by Sarrah Shahaway on November 26, 2015
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Background Termination of pregnancy remains a highly contested women's health issue in the Middle East. Indeed, abortion is particularly complex in the occupied Palestinian Territories

(OPT), given the unique sociopolitical climate in which Palestinian women interface with a healthcare system under occupation. The aim of this study is to explore perceptions of abortion and access to abortion services among women living in the OPT and how these views are reconciled with religious, ethical, and social realities. To our knowledge, this is the first study to explore women's views on abortion in Palestine.

Methods A total of sixty individual interviews among women ranging from 18-70 years old were conducted to explore the attitudes of Palestinian women on the religious implications, social consequences and accessibility of elective abortions. Convenience sampling was used to recruit non-pregnant Palestinian women from the department of Obstetrics and Gynecology at Al-Makassed Islamic Charitable Hospital in East Jerusalem. Participants were interviewed in Arabic using an open-ended questionnaire. Interviews were transcribed, translated to English, and qualitatively coded for reoccurring themes.

Findings The majority of participants were Muslim, married, urban dwellers, with a high school education or less, with at least 3 children. Preliminary themes arising from the interviews emphasize the centrality of religion and culture in making decisions about when it was appropriate to electively terminate a pregnancy.

Most women initially expressed opposition to abortion on religious and cultural grounds, except when the mother's life was at risk from the pregnancy. However, when further probed about specific circumstances, participants' views diverged more widely on cases of fetal anomalies, extra-marital pregnancy and rape. The timing of the abortion was considered important for most women, particularly in reference to when a fetus is considered to have a soul.

Most women identified social, rather than legal, consequences associated with the discovery of an abortion by the community. Beyond social ramifications, barriers to accessing abortion services included legal restrictions, hospital policy, prohibitive prices at private clinics, and differing levels of access to abortion services depending on whether women lived in Jerusalem, the West Bank, or Gaza.

Interpretation The findings from this study suggest a general societal resistance to elective abortions in the occupied Palestinian territories with some areas of ambiguity. The study also highlights the differential levels of access Palestinian women have to abortion depending on their wealth and ID status. Abortion is largely a taboo topic in Palestinian society and is rarely discussed openly. Understanding the interplay between politics, religion, history and reproductive rights has the potential to encourage additional research on women's health in ambiguous legal settings. The knowledge gained from this study can improve physicians' understanding of their patients' viewpoints and direct women's health organizations to areas of need. Finally, with the growing literature on the Palestinian healthcare infrastructure, this study has the potential to inform quantitative assessments of women's health needs in the intimately challenging circumstances of abortion.

Word count: 479

29. Cefazolin alone versus cefazolin, gentamicin and metronidazole for prophylaxis in patients undergoing cesarean delivery: a randomized clinical trial

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Abstract submitted by Khaled Abu El Aish on October 3, 2015 (khaledaish@yahoo.com)

Background: Uses of appropriate prophylactic antibiotic(s) regimen in caesarean section (CS) is useful in prevention maternal morbidity, hospital stay and antibiotic misuse resistant microbes. Because, there have been no studies in Gaza on the place of prophylactic antibiotics in the reduction of post-caesarean infectious morbidity, this study was carried out to compare a single preoperative dose of cefazolin with the current practice of giving cefazolin, gentamicin and metronidazole three times daily, beginning post-operatively, and until patient discharge from the hospital.

Methods: In a randomized, unmasked, parallel-group controlled trial, we enrolled women (aged 18–45 years) who were undergoing either elective or emergency caesarean at Al Helal Al Emirati Hospital, Rafah, Gaza Strip, occupied Palestinian territory. Recruited women were randomly allocated to one of the two treatment groups using manual-blocks formation based on the rolling of a die (i) 1000mg intravenous cefazolin 30-60 minutes before surgery (cefazolin group); or (ii) 1000mg cefazolin, 80mg gentamicin and 500mg metronidazole three times daily after caesarean section (triple antibiotic group), until discharge from the hospital. Outcome measures included readmission to the hospital due to wound infection and registered complications after CS as endometritis, urinary tract infections, febrile morbidities and other complications. Duration of hospital stay after CS and duration of surgery were measured also. Data were analyzed with SPSS (version 22.0). Groups were compared using student's *t* test, or χ^2 . The study was approved by the Ministry of Health and Helsinki Committee, Gaza Strip. Women provided verbal informed consent before their participation in the trial and consent to undergo a caesarean.

Findings: We screened 329 women and enrolled 313 (mean age 31.2 years [SD 6.5]); 26 women were excluded because 12 of them had previous infections, 5 had previous history of drug allergy and the data of the rest 9 were missing. 158 women were allocated to cefazolin group and 155 to triple antibiotic group. Demographic and pregnancy characteristics did not differ significantly among the two groups. Only four women were readmitted to the hospital because of surgical site infection, 3 from cefazolin group and 1 from triple antibiotic group ($p=0.375$). There were no statistically significant differences in the mean duration of hospital stay nor in duration CS between the two groups. We did not register endometritis or urinary tract infections nor febrile morbidities among the study groups.

Interpretation: Single dose cefazolin was as effective as a combination of cefazolin, gentamicin, and metronidazole in preventing post-caesarean complications. Therefore, we recommend to change current practice toward a single dose cefazolin pre-operative for preventing post-caesarean complications.

Word count: 419

30. Emergency caesarean deliveries in the Gaza Strip: A clinical care audit of delivered care

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Abstract submitted by Msallam M. Abukhalil on November 22, 2015 (bettina.bottcher@yahoo.co.uk; mabukhalil@students.iugaza.edu.ps)

Background The role of caesarean deliveries in developing countries is challenged by limited resources, less effective training of workforce, poor transport facilities and reduced compliance to the international standards of care in comparison with developed countries. The prior factors contribute to the high maternal and perinatal mortality. The development of the quality of obstetric care becomes an urgent priority in the developing countries. This will, therefore, mandate regular clinical audits and revisiting of management strategies and techniques.

Objective This clinical audit was to examine the management given to patients undergoing emergency caesarean sections (CS), with especial note of the decision to delivery time interval (DDI), and comparing this to the internationally acceptable standards. It was aimed to be used for developing standard operating procedures for emergency CS in order to improve the care offered to women undergoing emergency caesarean sections.

Methods This was a descriptive retrospective clinical audit based on available data from patient medical records within the timeframe of 1 – 30 September 2015 from Emirati Obstetric Hospital (EOH). The notes were retrieved from the archive. The hospital is a nationally dedicated hospital for obstetric care and gynecological management and also a teaching hospital. The hospital cares for patients from the Rafah district of the Gaza strip, Palestine. The audit included patients delivered by emergency caesarean section at EOH within 1 – 30 September, 2015. It was only possible to identify 20 patients with emergency CS during this time, which lies significantly below the expected number.

Results This audit revealed documentation of items such as age, gestational age at time of delivery, type of anesthesia and perinatal outcome in 20 of the 20 cases, almost 100%. However,

other important information such as the time of the DDI was not recorded in any of the medical records of the 20 cases. Therefore it was not possible to determine the decision to delivery intervals for these caesarean sections. As a result no comparison could be made to international standards on the provision of emergency

Interpretation This audit reveals the extreme weaknesses in the standard of medical record keeping at the Emirati Hospital, probably as an expression of a culture of suboptimal medical record keeping across the Gaza Strip. However, in order to perform meaningful clinical audits, accurate and complete medical records are necessary to assess the standard of care delivered in a healthcare center.

Clinical audit as a tool for quality improvement in healthcare is not used in Gaza. In fact, this was among the first such processes undertaken in the Gaza Strip. As such it was a very valuable first step. This audit highlights the need for all doctors and healthcare organizations in the Gaza Strip to clearly develop protocols or mechanisms to improve documentation and record keeping. Secondly, to identify the factors contributing to the non-compliance with internationally recommended DDI, in order to build mechanisms of improving the quality of care.

Word count: 480

31. Moderate to severe premenstrual syndrome and contributing factors among medical students at An-Najah National University, Palestine: A cross-sectional study

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Background: Premenstrual syndrome (PMS) is a common cyclic occurring disorder that affects young and middle-aged women mainly, and is characterized by group of physical, cognitive, emotional and behavioural symptoms that interfere with daily living activities. As there is no published research about PMS in Palestine, this study aims at assessment of the prevalence of premenstrual syndrome and the degree of its severity among the medical students at An-Najah National University (ANU), Palestine.

Methods: A cross-sectional study was conducted among female students at the Faculty of Medicine and Health Sciences (FMHS) at ANU, using a self-administered questionnaire. Estimated sample size to detect prevalence was 265 at 95% confidence interval, 5% margin of error and 8% non-response rate.

Data were collected from 265 female students using a systematic random sampling by taking every third student in each class. American Congress of Obstetricians and Gynaecologists (ACOG) criteria and Shortened Premenstrual Assessment Form (SPAF) were used to measure PMS prevalence and severity of premenstrual symptoms. An Arabic version, validated in Jordan was used.

Significant differences in severity of symptoms were tested using the Chi-squared test and t-test as appropriate. P-value ≤ 0.05 was considered statistically significant. All variables with p-value < 0.1 in the univariate analysis were subject to multivariate logistic regression analysis model to assess the predictor variables. Ethical approval and informed consents were obtained.

Results: A total of 265 questionnaires were filled and 5 were excluded as participants has had gynaecological diseases within the last year, or has had chronic physical or psychological illnesses.

The prevalence of PMS was 71.9% (187/260). The most frequently reported complaints were: lower back pain (57.7%), followed by feeling bloated (51.9%), feeling under stress (50%), irritability (48.5%), abdominal pain (48.5%) and feeling sad or depressed (46.9%). Significant relationships were found between the severity of premenstrual symptoms and academic class (rank), regular coffee intake, duration of menstrual cycle and absence from lectures and rotations. The most frequently reported self-treatment strategies used by the affected students to relieve premenstrual symptoms were increasing hot fluids intake (54.6%) and wearing heavy and warm clothes (50%).

Conclusion and recommendation: Premenstrual syndrome is common among female medical students at An-Najah National University and has negative effect in their academic performance and attendance and should pay attention by university officials. We highly recommend increasing the awareness of PMS among university students and staff and communicating the results with university officials in order to make attendance policy more flexible to adapt this high prevalent problem among female students.

Word count: 411

32. The Prevalence of musculoskeletal disorder and its determinants among women living within Palestinian 'C' areas in the year 2013

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Abstract was submitted by Rawan Musleh on November 30, 2015 (rawan_musleh@hotmail.com)

Along with the increase in life expectancy, the prevalence of age related chronic disorders like musculoskeletal disorders (MSD) is increasing. Musculoskeletal disorders arise in joint and back pain symptoms and have three major conditions that are Osteoarthritis OA, Rheumatoid Arthritis RA and Low Back Pain. In general, women are usually more affected by MSDs than men and the most prevalent condition among women in the developed countries is the RA that affects around 0.3-1.0% of the population, while the OA affects 18% of them. Beside age, the prevalence of MSD is affected by many other factors including the quality of life and socioeconomic status in addition to lack of physical activity and obesity. In this study that was conducted among Palestinian women living in area C of the west bank, we tried to find out the prevalence of MSD and associated factors. A total of 1,600 households were randomly selected from 4 different regions of west bank (north, middle, south and Jordan Valley). 1600 women between the ages of 16-90 years old completed the baseline survey, around 40% of enrolled participants were (16-29) years old, the majority of the participants were living in rural areas (62.3%) and were living with poor to moderate standards of living (69%). Regression analyses revealed that age, educational level, working status, region and locality of living area, standards of living, crowding rate, well being and distress were significantly associated with the musculoskeletal disease. This gives indication of the availability to limit the risks of getting such diseases by controlling the associated factors. Further studies should focus on the working conditions, the detailed violation of women's rights and the number of children those married women had delivered or took care of.

Word count: 285

33. Outcomes of cesarean deliveries in a Palestinian governmental hospital: A prospective quantitative study

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Abstract submitted on November 16, 2015 by Sahar Hassan (saharjhassan@gmail.com)

Background: The national population rate of cesarean delivery (CD) in Palestine (20.4%) has dramatically increased in the last two decades and has reached 32% in a governmental hospital. The medically unnecessary use of CD increases maternal and newborn morbidity and mortality and utilizes scarce resources. Aiming to better understand this challenge, we analysed the obstetric profile and outcomes of women who underwent CD between September 25, 2011 and January 6, 2012, in a West Bank governmental hospital.

Methods: We reviewed the medical records of all pregnant women admitted to give birth, to be observed or treated for pregnancy complications or complaining of signs of abortion/miscarriage or ectopic pregnancy including postpartum women with complications within seven days after giving birth. The data was collected daily for 3 consecutive months as part of a multi-country study on maternal and neonatal near-miss using the WHO standard form (Individual Form HRP

A65661). We reviewed a total of 1,583 record. After excluding multiple births, a total of 1209 (77.6%) women gave birth; 916 (75.7%) vaginal birth and 293 (24.2%) CD. We analysed the data with IBM SPSS Statistics (version 20). The study protocol was approved by the Institutional Review Boards of the American University of Beirut and Birzeit University.

Findings: The mean age of women with CD was 29 years (SD 6.1); 100 (34.1%) women were young (16-25 years), and about 63 (21.5%) aged 35 to 48 years. Among these women, 64 (21.8%) of the 293 were primiparae, and 56 (19.1%) had five previous births or more. 146 (49.8%) women had no previous CD, and 75 (25.6%) women had previous two or more CD. At admission, 141 (48.1%) had no signs of labour, 34 (11.6%) had breech presentation, 27 (9.2%) women suffered from preeclampsia/eclampsia. Surprisingly, 204 (69.6%) of CDs were performed at the gestational age of 37 to 40 weeks.

Documented obstetric interventions during labour for women with CD included 31 (10.6%) who had their labour induced, and only 10 out of 27 (37%) women with pre-eclampsia/eclampsia received Magnesium Sulfate. 26 (8.9%) women with CD had hemorrhage during or after delivery, 18 (6.1%) women received blood or its products; out of which five women received > 5 units. Furthermore, one woman suffered a ruptured uterus, three had hysterectomies, six were admitted to the ICU and eight were classified as near-miss cases according to WHO criteria and most had a general anaesthesia. Neonatal outcomes included five stillbirths (three fresh), 53 (18.1%) neonatal complications, 44 (15%) admissions to NICU and 9 deaths by 7 days of life.

Interpretations: Although the records were not sufficient to judge the medical indications, results indicate that some CDs may have been unnecessary and many women and newborns had morbidities. Rigorous and routine documentation of interventions including indications for CD and maternal audits are important strategies among others to identify medically unnecessary use of CD, poor quality of care and maternal/ neonatal morbidities, particularly crucial in the Palestinian context of high fertility, difficult access to facilities and limited resources.

Word count: 497

34. Using outcome mapping for the evaluation of support groups for women caretakers of children with a handicap

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Abstract submitted by Suzan Mitwalli on November 30, 2015 (smitwalli@birzeit.edu)

Background In the West Bank, families caring for persons with a handicap are especially vulnerable within situations of political, social and economic hardship. Formal support services are few, located in the cities and difficult to access for those living in rural areas. To improve the

wellbeing of women caretakers of children with a handicap, the Institute of Community and Public Health (ICPH) at Birzeit University together with the Palestinian Community-Based Rehabilitation (CBR) program and the Netherlands-based War Trauma Foundation (WTF) established 11 women's support groups following a Multi Family Approach (MFA). The intervention is coupled with a solid monitoring and evaluation design called Outcome Mapping (OM) to assess the adaptation, implementation, and scaling up of the intervention. OM is not only end-product focused, but also considers changes in behaviour, relationships and actions of organizations and individuals, as well as related contextual factors, throughout the project's process over time.

Methods The monitoring and evaluation project, supported by a researcher from King's College London, is divided into four successive stages: intentional design, outcome and performance monitoring, evaluation, and dissemination and sustainability. Four workshops were carried out to (1) develop process and outcome indicators; (2) create a framework for the monitoring based on participant observation in combination with the OM data recording system consisting of outcome and strategy journals and a general strategy map; (3) develop evaluation tools including a survey and semi-structured interviews for support group members, CBR workers and supervisors, as well as ICPH and WTF staff; and (4) provide training in qualitative data analysis using the software Atlas-ti.

Findings In this ongoing research project, the team at ICPH has carried out participant observation among 10 MFA groups and conducted regular informal interviews with CBR staff and MFA group members. Detailed notes were taken during meetings and conversations in outcome and strategy journals. Based on these insights, they supported CBR workers and the MFA support groups to improve the support group sessions. First results show that women caretakers of children with a handicap feel that the groups provide them with an opportunity to discuss topics that are important to them with like-minded women in a secure environment. Topics include, for example, the illness histories of their children, behavioural problems, and education and awareness of teachers. By sharing their stories with others, they feel understood and often this leads to thinking together of initiatives to improve their and their families' lives.

Interpretation Carefully designed psychosocial intervention studies are complex undertakings, requiring careful planning, clear definition of expected outcomes and a solid evaluation design. Using OM has already proven to be an adequate method as it allows studying changes in behaviour while also taking contextual factors and the unexpected outcomes over the course of an intervention into account. In addition to evaluating and thereby adjusting the MFA approach to the local context, sustainable stakeholder partnerships, strengthened training methods, and local capacity in qualitative project evaluation were further developed.

Word count: 485

35. Effect of antenatal care on low birth weight in Gaza Strip, occupied Palestinian territory: A case-control study

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Abstract submitted by Akram Abu Salah on October 3, 2015 (abusalah76@gmail.com)

Background: Antenatal care is the intervention that is most often recommended for women under supervision of medically trained personnel. It has been accepted as an effective means of reducing risk for the mothers and fetus during pregnancy. Actually, antenatal care is a composite of a variety of services provided as a whole package services. Education, an example of antenatal care services, is intended to prevent obstetric complications by improving nutrition, hygiene and knowledge about sign and symptoms of common medical problems during pregnancy and delivery in purpose of modifying behavior and life style issues. Low birth weight (LBW) - less than 2.5 kilos at birth - is a significant factor affecting neonatal mortality and predictor of newborn health. The study aims to assess the association between antenatal care provision and LBW.

Methods: A case-control study in ratio 1:1 was conducted in two hospitals with obstetric services in Gaza Strip. 446 women 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. 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 analyzed antenatal predictors that remained after stepwise backward selection. In model 2, we analyzed the significant variables from model 1 and other principal confounding factors. The confounding variables were geodemographic characteristics: parents' education; occupation; and residence, and maternal body-mass index. The study protocol was approved by the Ministry of Health and authorized by the Helsinki Committee, Gaza Strip.

Findings: Using stepwise backward selection of the significant prenatal variables at p value <0.20, the adjusted matched odds ratios for LBW were calculated. Six factors were found to be independently significant predictors for increasing the likelihood of delivering LBW newborns, namely diminished perception regarding the quality of given antenatal care, first-cousin marriage, and reporting medical complains of anemia, pregnancy induced hypertension (PIH), periodontal diseases, and vaginal bleeding, after adjustment for principal confounder variables

Interpretation: The birth weight of newborns influenced significantly by the number of antenatal visits made by the mother. Many of these factors were thought to be preventable through health education, behavioural changes of maternal life style, and improvement of antenatal care provision. The study emphasize on the importance of governmental actions in

monitoring, controlling and improving the quality of antenatal care provision at different health care sectors in Gaza Strip.

Word count: 411

36. Knowledge, attitude, and practice among farm workers applying pesticides at cultivated area in Jericho district

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Abstract submitted by Amira Shaheen on November 17, 2015 (shaheenamira@yahoo)

Background: Pesticides cause a major environmental problem. The excessive uses of pesticides leave chronic and acute toxic impacts on human health. Some studies indicated the presence of association between the excessive use of pesticides and climate change. The current study is intended to assess knowledge, attitude, practice, and toxicity symptoms among farm workers excessively applying pesticides in cultivated area in Jericho District.

Methods: Cross-sectional study was used. A convenient sample of 220 farm workers applying pesticides at cultivated area in Jericho was interviewed. Face-to-face interviews were conducted using a questionnaire that was designed on the basis of the Environmental Protection Agency Questions (1993). Data was entered and managed using SPSS version 13. Chi-square and t-tests were used to identify the significant of associations, which were considered significant if P-value is less than 0.05. Ethical approval for this study was obtained from Al-Quds University ethical board.

Findings: The response rate was 93%. Due to harsh conditions in this area, the majority of the interviewed farm workers (99%) were men. Knowledge among the farm workers with regards to using pesticides was relatively high, except for knowing biological control and other agricultural ways for controlling (26.4%) and (12%) respectively. As with regards to attitude, almost 60.6% of farm workers had a positive attitude towards to the using of pesticides. At the same time, About (43.0%) of farm workers believed that their bodies develop resistant's against the pesticides side effect. The most common used pesticides are Marshal (Carbosulfan) and Bayfidan (Triadimenol), (49% and 48%) respectively.

The practice of the interviewed farm workers regarding the usage of pesticides was low. A significant percentages of farmers (91%) and (95%) reported that they know of the importance of wearing wide brimmed hat as well as putting oral nasal mask, yet they did not do so, P-Value=0.007 and 0.049 respectively. About, 41% of farmers reported that they are re-entering the field in the same day of spraying. These unsafe practices lead to the increasing in toxicity symptoms related to pesticides that were reported by the interviewed farm workers.

The most common pesticide-associated toxicity symptoms that farm workers reported to have were burning sensation in eyes and face (75%), headache (62%), cold/breathlessness/chest pain (51%), and itching skin irritation and dizziness (46%). It is clear that most of these symptoms are related to the use of organophosphorus pesticides.

Interpretation: Training programs that cover safety aspects accompanied with follow-up of the farmers and these that stress the importance of optimizing pesticides use through integrated best management (IBM) should be held. In order to take the suitable intervention policies, further studies at the biological effects of pesticides use on farm workers' health should be held. Furthermore, farm works with acute symptoms should be followed-up so as not to be developed into chronic symptoms.

Word count: 461

37. Assessment of respiratory health indicators among agricultural workers exposed to pesticides: A cross sectional study from Palestine

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Background Pesticides are toxic chemicals commonly used in agriculture. Insecticide, herbicide, and fungicide act to fight pests such as insects, rodents, and microbes that can cause and spread a variety of diseases that pose a serious risk to public health. No previous studies have been carried out to assess the respiratory health indicators among agricultural workers who are being continuously exposed to pesticides. Thus, this pilot study aims to determine the respiratory health indicators among workers in the field of agriculture in Jericho-Palestine, where pesticides are highly used.

Methods A cross-sectional study was conducted in Jericho using convenience sampling method. Forced spirometry was used to measure the forced expiratory volume in 1 second (FEV1) and forced vital capacity (FVC), the FEV1/FVC ratios and prevalence of restrictive and obstructive lung diseases. Demographic characteristics were also gathered. Statistical analysis was carried out using SPSS software.

Results A total of 98 workers were screened. Their mean age was 41.9 ± 13 years while the mean duration of exposure to agricultural chemicals was 27.8 ± 7.2 years. According to the assessment of the lung status, 92% of the workers showed lung diseases, 80% were restrictive lung disease, 12% were obstructive lung disease and 8% of the workers had normal lung function. The mean FEV1 of the sample was 2.6 ± 0.8 compared with normal reference value of 3.9 ± 0.6 ($P < 0.0001$). On the other hand, the mean FVC for the study sample was 3.2 ± 1.4 compared with the normal reference value of 5 ± 0.6 ($P < 0.0001$). The ratio of these two parameters was 85.4 ± 15.4 compared with a normal reference ratio of 79 ± 2.7 ($P < 0.001$).

Interpretation In this study, we found that agricultural workers who were exposed to pesticides suffered from a variety of diseases that pose a serious risk to their health, mainly on the respiratory system. Training of agricultural workers on the use of proper personal protective equipment when using pesticides should be encouraged. Further studies regarding the role of occupational exposure to certain types of pesticides and associated respiratory health effects would be worthwhile.

Word count: 347

38. Workplace aggression, psychological distress, and job satisfaction among Palestinian nurses: A cross-sectional study

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Abstract was submitted by Yousef M Jaradat on November 30, 2015 (jaradat.you@gmail.com)

Background Nurses who are exposed to workplace aggression from patients, patient relatives, colleagues or visitors are at risk for adverse psychological health outcomes and job dissatisfaction. We aimed at estimating the prevalence of exposure to workplace aggression and the association with psychological distress and job satisfaction among nurses in Hebron district, Palestine.

Methods A cross-sectional study was undertaken between October and December 2012 among all 372 registered nurses in the health care services in Hebron district. Ten were on long leave,

16 refused to participate, and three did not provide sufficient data, thus, the final sample included 343 nurses (92.2 % response rate), 62 % women and 38 % men. The nurses were asked to answer a questionnaire covering socio-demographic data and a WHO-questionnaire about workplace aggression, which included questions about exposure to physical aggression, verbal aggression and bullying. Psychological distress was assessed with the General Health Questionnaire (GHQ-30). We used continuous scores ranging from 0 to 90 (highest level of distress). Job satisfaction was assessed with Generic Job Satisfaction Scale. The final scale had a range of 0-40 (highest job satisfaction).

Data was analyzed with Stata/IC 10). Pearsons' chi-square and linear regression analyses were applied to estimate associations between exposure to workplace aggression with psychological distress and job satisfaction.

The study was approved by the Regional Committee for Medical and Health Research Ethics, REC South East, Norway. Permission to conduct the study was obtained from the Palestinian Ministry of Health, written informed consent was provided, and participation was voluntary.

Findings The prevalence of workplace aggression of any kind was 27.1 % (95 % CI 22-32). Seventeen nurses (5 %) reported exposure to physical aggression, 83 (24.2 %) reported exposure to verbal aggression, and 25 (7.3 %) reported exposure to bullying. Male nurses reported a significantly higher prevalence of bullying than female nurses (11.5 % compared with 4.7 %), while younger nurses reported a higher prevalence of exposure to physical aggression, verbal aggression and bullying. After adjusting for covariates, nurses exposed to verbal aggression had a tendency (borderline significant) to report more psychological distress by 2.7 units ($p = 0.052$; 95 % CI -0.02 to 5.33). Bullying was associated with lower job satisfaction by 2.6 units ($p = 0.04$; 95 % CI -5.1 to -0.2).

Interpretation More than a quarter of the nurses reported some sort of workplace aggression. Nurses exposed to verbal aggression had a tendency to report more mental distress. Bullying was associated with lower job satisfaction. Because the study had a cross-sectional design and both exposure and outcomes were measured using self-report, interpretation of the results should be made with caution.

Word count: 434

39. Oral health related quality of life (OHRQoL) among Palestinian 7th-9th grade school students in Ramallah City

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Abstract submitted by Mohammad Sarhan on November 28, 2015
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Background: Children are susceptible to many common dental and orofacial disorders such as dental caries, periodontal problems and mal-occlusion affecting their quality of life. As oral health is an integral part of general health, the Oral Health Related Quality of Life (OHRQoL) measures were developed to assess oral health status and its impact on quality of life among children. This study assesses the OHRQoL and its associated factors among school adolescents attending Ramallah city schools.

Methods: A cross-sectional design used to survey 364 students from 7th, 8th and 9th grades attending two governmental schools (one girls and one boys) in Ramallah city. The Child Perception Questionnaire (CPQ₁₁₋₁₄) was used to assess OHRQoL, which includes oral symptoms (OS), functional-limitations (FL), emotional well-being (EW) and social well-being (SW) subscales. Clinical examination included caries risk assessment using The American Academy of Pediatrics (AAP) and The American Academy of Pediatric Dentistry (AAPD) oral health risk assessment tools. Decayed, Missed, and Filled Teeth (DMFT) score was calculated for each participant. Plaque index and gingival inflammation were also recorded. Treatment needs for each student were identified, whether simple restorative, pulp therapy, tooth extraction or orthodontic treatment. Frequencies, continuous variables means, standard deviations, as well as Spearman's Rank correlation and the T-test were used in analysis. With the CPQ₁₁₋₁₄ score variable set as the dependent variable, associated factors found significant (CI of 95%) in bivariate analysis were used in regression analysis. SPSS version 22 was used in the analysis.

Results: The sample mean age was 13.1 (± 0.9) years. Females composed 50.8% of the sample. The mean DMFT score was 3.3 (± 2.5). At least one carious first permanent molar was found in 84.1% of the students. 82.7% needed restorative treatment. 44.2% needed urgent treatment because of deep or painful carious lesions. Almost a third with urgent treatment needs (32.3%) were diagnosed to have at least one tooth that needed endodontic treatment. 45.6% needed orthodontic treatment. 86.5% were found at high risk of developing new carious lesions. The CPQ₁₁₋₁₄ total mean score was 18.81 (± 17.75). Mean scores of CPQ₁₁₋₁₄ subscales were: 38.43 (± 25.82) for (OS), 16.69 (± 22.08) for (FL), 15.93 (± 25.63) for the (EW) and 8.44 (± 16.95) for the (SW) subscales. Although the DMFT score was not significantly associated with CPQ₁₁₋₁₄, there was an increasing trend of the CPQ₁₁₋₁₄ score by 0.910 units, the OS score by 0.945 units, the FW by 1.087 units, the EW score by 1.252 units and the SW by 0.359 units as a result of one DMFT unit increase. Linear regression showed that OHRQoL's CPQ₁₁₋₁₄ score was higher (that is, measuring lower OHRQoL) among boys, students with mothers who do not have Bachelors or more degrees, and among those found to need endodontic treatment.

Conclusions: The need for endodontic treatment, indicating irreversible inflammation of the pulp accompanied with severe pain and discomfort, was the most statistically significant predictor for lower oral health related quality of life. The results are alarming and call for further investigation of the oral health of adolescents.

Word count: 500

40. Oral health status, knowledge, practices, and access to dental care among Palestinian women during pregnancy

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Abstract was submitted by Elham Kateeb on November 30, 2015 (elhame20@gmail.com)

Background: Good oral health during pregnancy can not only improve the quality of life of the pregnant mother, but also potentially reduce complications during pregnancy as well as the risk of her child developing early childhood caries (ECC) in the future. Therefore, this study came to investigate pregnant women's oral health knowledge, beliefs and behavior and to identify barriers to accessing care and practicing good oral hygiene.

Methods: Pregnant women visiting Maternal and Child Health Care (MCHC) units at the Ministry of Health (MOH) centers in East Jerusalem area were invited to participate in this study. In-person structured interview was conducted to assess: oral health knowledge and beliefs, oral hygiene practices, access to dental care and mothers' intended behavior towards their children oral health care. Mothers' confidence in their commitment to brush their children's teeth daily, their current stress level and the social support available for those women were also measured in this study. In addition, screening for oral health conditions was carried out using DMFT/S to assess dental caries experience and the three gingival health indices (plaque, gingival and calculus) to assess periodontal diseases. Descriptive statistics for all the previous variables were generated.

Results: 119 pregnant women agreed to participate in this study. Eighty-seven percent of our sample were house wives with mean age 26 ± 5 years. Twenty-five percent of women in this study had a household monthly income less than 380\$ and 45% did not finish their high school. This sample had an average DMFT of 14 ± 5 and an average DMFS of 31 ± 20 . Thirty-five percent of our sample did not visit a dentist in the last 3 years and 51% were advised by family and friends not to visit the dentist while pregnant. Eighty-one percent of our sample had no dental insurance and 28% considered cost as a barrier to access dental care. Thirty-five percent of women in this study brushed their teeth "sometimes" and 89% "Never" flossed their teeth. Twenty-four percent perceived their oral health as "Poor" and 55% believed that "A woman can lose a tooth just because she is pregnant". Fifty percent did not know about any connection between poor oral health and adverse birth outcomes and 21% believed that cavities in baby teeth do not matter.

Conclusions: Women in this study had very high DMFT/S scores and knew very little about oral health and proper oral hygiene practices. The participants reported significant barriers to obtaining dental care including limited access to affordable dental services and lack of awareness about the importance of maternal oral health and its connection to general health and adverse birth outcomes. Findings from this study suggest the need for preventive and educational

interventions to be incorporated in pre-natal health care programs to improve maternal and child oral health in Palestine.

Word count: 459

41. Postural Sway among UNRWA\West Bank school children

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Abstract submitted by Jamal Nammoura on November 24, 2015 (J.NAMMOURA@UNRWA.org)

Background: There is little information on the postural status of school children in Palestine. The aims of this study is to examine the upright, static and dynamic sagittal posture of UNRWA Palestinian school children, and identify possible critical phases of postural evolution “maturation”, and the effects of age, gender and obesity on postural health parameters among first, sixth and ninth grade students.

Methods: A total of 17029 UNRWA students from the first, sixth, and ninth grades were examined for postural sway in 96 UNRWA schools in the West Bank. (10108) 19.07% were females and (6921) 13.06% were males. Six teams of 22 physiotherapists examined the neutral upright position during standing and walking to identify abnormal postures such as Scoliosis, Kyphosis, and Lordosis, Flat Back, Flat Foot and Hyper Arch by observation. Body mass index (BMI) was measured using tapes and scales. Ethical approval was obtained from UNRWA’s Health and Education Departments, and school principals and students.

Results: The prevalence of Scoliosis was 3.9%, Flat Cervical 0.1%, Cervical Lordosis 0.4%, Torticollis 0.1%, Brevicollis 0.1%, Lumber Lordosis, 4.3% Kyphosis, 2.3% , Kyphoscoliosis, 1.4%, Hyper Lordosis 4.3%, Flat Back 1.4%, Leg Length inequality 0.3% and Congenital Dislocation Hip 0.1%, Anterior Tilting Pelvis 1.7%, Posterior Tilting Pelvis 1.4%, Internal Rotation Hip 4.7%, External Rotation Hip 3.4%, Congenital dislocation Hip 0.1%, Geno Varum (O. Knee) 0.6%, Geno Valgum (X. Knee) 1.8%, Spina Bifida 2 cases.

The prevalence of postural abnormalities among the sample was 48.5%. Significant differences were found among first, sixth and ninth graders at 41.6%, 42.3% 62.6% respectively. Abnormalities were higher in females (50.5%) compared to males (45.0%). Prevalence of postural abnormalities was higher in the overweight category at 51.9% compared to the two normal weight categories at 48.6% and low weight category at 45%. Overweight females in ninth grade had the most common abnormalities at 70.3%. Females results were worse than males in all postural regions except for shoulder and hip where males showed higher percentages at 19.4% compared to 13.9% and 9.5% to 6.8% respectively. Postural problems were more in overweight students.

Interpretation: Postural abnormality increased with age and weight among the Palestinian UNRWA students. This highlights the need for a strategic corrective intervention to manage this serious issue. It is important to increase awareness among students during the physical activity classes about the consequences of obesity on postural health and how to prevent postural abnormalities.

Word count: 395

42. Prevalence of visual disorders among urban Palestinian preschool children

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Abstract was submitted by Liana Al-Labadi on November 30, 2015 (liana.allabadi@gmail.com)

Background Childhood blindness is a major public health concern since 40% of visual disorders that can cause blindness among children are preventable. Visual disorders that can affect the normal vision development early in childhood include refractive error, anisometropia, strabismus, color vision deficiency and ocular pathology, all of which may lead to the development of amblyopia, one of the most common causes of unilateral vision loss. Vision screening programs among pre-school children have been implemented in several countries as a tool for early detection and intervention of visual disorders. In Palestine, there is a lack of scientific data on the prevalence of visual disorders among children. In addition, vision-screening programs that are currently implemented are neither validated nor effective.

Objective A cross-sectional study is conducted to determine the prevalence of visual disorders among urban Palestinian preschool children between the ages of 3 and 5 years in Nablus city.

Methods All children attending eight randomly selected preschools underwent a validated vision screening administered by trained eye care professionals. The screening protocol included assessment of visual acuity, ocular alignment, depth perception, color vision, non-cycloplegic retinoscopy, and ocular health. A pass-fail criterion was utilized to refer all children who failed the vision screening for comprehensive eye examination including cycloplegic retinoscopy and dilated fundus exam.

Results A total number of 689 children underwent the vision screening. Out of the 252 children who failed the vision screening, 118 children responded to the referral call for comprehensive eye examinations. Refractive error was the most prevalent visual disorder with a prevalence of (19.5%), followed by amblyopia (3.5%), color vision deficiency (1.8%), strabismus (1.18%), and ocular health abnormalities (0.78%). There was no age ($p=0.35$) and/or sex ($p=0.32$) variation in children having refractive errors. Anisometropia was the leading cause for amblyopia ($p=0.000$), followed by significant refractive error ($p=0.003$) and strabismus ($p=0.001$).

Conclusion Refractive error was the most prevalent visual disorder affecting Palestinian preschoolers in Nablus. Both anisometropia and significant refractive errors were found to be the major causes of amblyopia among this population. Effective nation-wide preschool vision screening programs must be required and implemented in Palestine to screen for amblyogenic risk factors.

Word count: 353

43. Positive effects on community-based approaches for anemic children in Jabalia, north Gaza

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Abstract was submitted by Yuka Kaneko on November 30, 2015 (kaneko@ngo-jvc.net)

Background: Micronutrient deficiency, particularly Iron Deficiency Anemia (IDA) has long been a serious health problem in Gaza, particularly for children under 5 years of age. Efforts have been made but no drastic improvement was observed, and actually, 32.4 percent of Gaza children are suffering from IDA according to the report, “Palestinian Micronutrient Survey (PMS) 2013”, (UNICEF and Ministry of Health in 2013).

Objectives: Introduce innovative, community-based intervention to improve the status of IDA for children.

Method: We used the data which were obtained through JVC project in Gaza aims mitigation of micronutrient deficiency of Gaza children under 5 years of age. The project outline is as follows:

Beneficiaries

1. Children under five years of age: 1,186
2. Mothers and women: 5,849
3. Community Volunteers: 30

Targeted area : Beir Al Najah, Jabalia, Gaza Strip

Activities: Pediatricians and Community Health Workers (CHWs) conduct two weeks lecture trainings regarding the child health, nutrition and counselling skills to selected 30 Community Volunteers (CVs). After the trainings, CVs conduct home visit (A) -Child Nutritional status Check for children under 5 years of age-, and home visit (B) -follow up counselling to the mothers and the children diagnosed IDA during the home visit (A). Both home visits will be conducted under supervisions of CHWs. If CVs found children who were diagnosed severe IDA, they will refer the children to clinics, yet if the cases were only moderate to first IDA, they continuously conduct follow up counselling to the mothers and children in the house hold level. Besides these home visit activities, public awareness sessions regarding the child health will be conducted by CVs in CBOs, Primary Health Clinics and Mosques in the community.

Findings: Among the children who targeted by the project, 39.5 % children were diagnosed IDA. Total number was 469 out of 1,186, and 10 were severe to moderate and 459 were first to moderate cases. After the 13 months intervention, 75.3% of children diagnosed with first to moderate IDA improved their hemoglobin level to 11g/dl (346 out of 459 cases). During the period, 1,122 home visits were conducted, also 532 awareness sessions were conducted by CVs under supervisions of CHWs. 5,849 mothers and women received the services during the project, and 83.7% of them were able to name 3 signs of anemia, and 89.7% of them were able to name 3 types of food rich with iron by the end of the project.

Interpretation: The study indicated that, even under very difficult social and economic conditions, community-based innovative approach through the training for CVs could contribute to the improvement of IDA status. Even risks of hostilities in Gaza may destroy the community itself sometimes, appropriate education and mind of volunteer will tackle the IDA problem in Gaza strip.

Word count: 454

44. A Latin square designed study for improving naming in Aphasics: A comparison of three intervention methods

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Abstract submitted by Lina Kort on November 13, 2015 (lk_261991@hotmail.com)

Background: The purpose of the study is to investigate and identify a reliable and effective treatment approach for naming disorders. The study is carried out in the Arabic language and focuses on treatment suitable for pre-morbidly illiterate patients. It hypothesizes that combining two established therapy strategies into one multi-modal based treatment, with the exclusion of any illiterate incompatible tasks, would provide improved performance for aphasic patients in the word retrieval process.

Methodology: The data collection took place in Palestine recruiting patients from Bethlehem

Arab Society for Rehabilitation Hospital. It targets an Arabic-speaking aphasic group with naming disorder divided in three groups matched to age, gender, type of naming disorder, severity and date of onset. The participants were fifteen adult patients; seven males and eight females divided between expressive aphasia and anomia. All the participants demonstrated a naming disorder. Moreover, three modes of presenting the word lists; laminated cards, iPad photos and real objects were tested and compared, in seek of the best presentation form. The test items were a list of thirty words divided to three sub-lists, where each sub-list appeared in the form of the three conditions. This was done by employing the three sets of words in a Latin square design to generalize the effect of treatment results. All participants signed a written consent form, agreeing to take part in the study that was granted ethical approval by University of Essex; Language and Linguistics Department.

Findings: Statistical Computing Program R was used to analyze the outcomes of the study. The multi-modal based treatment has shown improvements among all participants in the three groups according to the overall percentages of correctly named words before and after treatment; 23.78% and 52.23% respectively. Furthermore, mixed effect logistic regression models were fitted to test for significance before and after therapy, in the three conditions. The pre-therapy accuracy analysis showed insignificant difference between either iPad and laminated cards methods or iPad and real objects methods. These P-values are 0.875 and 0.568 respectively and they confirm the appropriately matched participant groups. Post therapy accuracy analysis suggests significant differences between treatment effects using different therapy methods. The results show highest effectiveness of treatment that introduces real objects, followed by iPad photos therapy and finally laminated cards method. Significant differences ($P < 0.001$) were calculated comparing iPad photos method and laminated cards, as well as for differences between iPad photos method and real objects involved therapy.

Conclusion: Overall, the results show that combining two treatment methods into a multi-modal based treatment with the elimination of illiteracy incompatible tasks, would indeed be effective in the treatment of naming disorders for pre-morbidly illiterate patients. Moreover, this investigation provides a reliable resource for speech therapists, especially in the *Arab* world, to refer to when treating *illiterate* and *literate* aphasic patients with naming disorders using the multi-modal based treatment presented in *real objects*. The Said Foundation Scholarship funded the study.

Word count: 476

45. Assessment of data quality in the Palestinian cancer registry, West Bank, Palestine

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Abstract submitted by Izzat Rayyan on November 30, 2015 (rayyani@who.int)

Background Cancer surveillance is central to the design, implementation, and evaluation of cancer prevention programs. The Palestinian Cancer Registry (PCR) has reported on cancer cases in the Palestinian population since 1998. The aim of this work is to assess the quality of the 2012-2013 PCR data for inhabitants in West Bank, Palestine

Methods Data in the PCR were evaluated for completeness, validity, and comparability. Completeness was assessed through a) a semi-quantitative method: comparing incidence rates and trends with similar populations, and b) a quantitative method: cross-linkage to data abstracted from oncology referral reports as an independent data source. Validity was assessed by exploring the extent of missing data on basic registry components. The ability of measuring data quality indicator such as percentage of death certificate only (%DCO), percentage of morphology verified (%MV) and mortality incidence ratio (MIR) were explored. Comparability was assessed through context assessment via semi-structured interviews and review of standard operating procedures (SOPs).

Findings PCR collects data from clinicians, pathology labs, and the Cause of Death Registry (CoDR).

Completeness: Only 29-49% of the cancer cases reported in the referral records that were referred to oncologic treatment between 2007 and 2012 were detected in the entire database of PCR.

Based to the PCR, the 2012 overall cancer incidence rate in the West Bank was 79.5 per 100,000. This is compared to 98.8 in Jordan, 129.5 in Egypt, and 211.1 in Lebanon. An average increase in incidence rate of 0.5% per year from 2003-2013 was reported, indicating instability of data. Mortality: incidence ratio could not be calculated due to unreliable CoDR data.

Validity: Date of diagnosis and date of registration were not discerned during data entry. For cases registered in the period 2012-2013, demographic variables were near complete. Due to poor registration procedures, missing morphology values could not be discerned. Data on treatment, survival and staging were largely missing. The variable coding basis of diagnosis was not updated upon receipt of new sources of information, thus a non-standard method was used to

measure %MV and %DCO, which decreased from 64-46% and 23-8.3% from 2012-13, respectively.

Comparability: No SOPs or technical definitions are currently followed at PCR.

Interpretation The PCR data for West Bank inhabitants has fundamental shortcomings in terms of comparability, completeness, and validity. Basic data quality indicators cannot be calculated reliably due to flaws in the handling of data. In spite of possible competing explanations for the quality gaps, including lack of access to adequate health care and recent reorganizations, the gaps are most likely due to poor performance of the continuum of the cancer surveillance system. PCR data quality is at present not providing reliable data for decision makers, and a reform of several aspects of the West Bank PCR is needed, including leadership, SOPs and training of registrars.

Word count: 461

46. Institutionalizing the community health programs into Palestinian health care system

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Abstract submitted by Mohammad Al Khaldi on November 10, 2015
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Background: Community Health (CH) is the major field of public health and one of the important health system pillars. It addresses protection, promotion and preservation of individual health in particular geographical areas of communities. Palestine has a complex situation mainly in the health sector despite of fragile setting; however, the health system is fairly well-functioning and it has four health providers deliver different services. CH work is not contemporary, but as a concept and practice it is uncertain. Various community health programs (CHPs) are running without being community-oriented. There are knowledge scarcity and studies shortage, this ambitious study sought to investigate the status of CHPs its policies, performance, challenges and generate useful suggestions to be institutionalized.

Method: descriptive analytic and qualitative design was approached, the study carried out in October and November 2014. Literature; national reports and structured open-ended survey were conducted. The survey contains eleven open-ended questions has been sent to ten experts electronically. Participants who are involved in CH field were selected purposively from five sectors; three experts from Ministry of Health (MoH), three academicians, two NGO and two from private and international agency. Non-probability sample was used and survey questions were developed and piloted by expert's consultations. The information was managed and analyzed by Excel program based on coding and thematic analysis (OCTA) technique.

Findings: Perceptions about the status of CHPs were controversial, some of respondents stated that are fragmented; other believed that several programs are well-functioned; two believed that CH concept is still uncultured. Participants were fairly satisfied about CHPs mainly at MOH and UNRWA chiefly Immunization, FP, screening and awareness, but private role is still lacking; three of views indicated the CHPs focus on individualized rather than community. About 50% was pointed that some programs are effective and efficient, but around 40% of responses were between “yes” and “no”. The majority agreed that primary care was largely provided, but 40% of responses revealed that other secondary and tertiary services are regularly afforded, but other services are still weak. About 40% of respondents revealed there are regulated protocols and policies but not implemented, 30% said not existed, 20% confirmed in some programs. The major gaps at the institution level were: lack of coordination and standardization, fragmented efforts, resources scarcity and weak training activities. Nationally, no unified strategy and priorities, poor planning and needs irrelevancy, and at the community level were CHPs undervaluing, weak public awareness and people engagement.

Interpretation: most of CHPs are not well-embedded, despite of a positive progress in certain implementing programs. CH concept is not significantly cultivated; its programs are not effective and efficient mainly due to lack of policies. To strengthen CHPs, develop clear national CH strategic plan and priorities with a political commitment and active community participation, promote the culture, support effective information, monitoring and evaluation system, design CHPs inclusively based on community-oriented instead of individual. Need for strong stakeholders network and coordination and allocate sufficient financial resources and recruiting CH workers. Urge for enabling capacity building and education programs.

Word count: 500

47. Reasons for medical referrals of Gaza patients, 2015

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2 WHO field researcher

Abstract was submitted by Anita Vitullo on November 30, 2015 (vituloa@who.int)

Background During the last 5 years, there has been a trend of increased number of Gaza patients referred for health care to non-Ministry of Health facilities. This is attributed to the weakened public health system, shortages of drugs, medical disposables and equipment, inadequate labs, and lack of skilled human resources and specialized services to address the changing population needs toward more non-communicable and chronic disease care. The health system capacity is also hindered by the closure of the Gaza Strip since 2007, and the political, financial and

developmental restrictions in the context of Israeli occupation. However, actual reasons for referrals have not been studied.

Methodology Referring physicians in Shifa Hospital, which alone generates 50% of referral requests in Gaza, were given questionnaires to complete for every referral request submitted during 2 months of 2015. Respecting patients' confidentiality, 1000 completed questionnaires were collected including diagnosis and a checklist of possible reasons for referral. Data were analyzed using excel. Quality of data collection was checked on 10% of questionnaires using patients' records while data entry was checked by reentering 5% of the questionnaires.

Findings Characteristics of patients were: 47% female, 53% male; 65% from Gaza governorate, 34% other governorates; and 9% urgent, 91% non-urgent referrals. Of 1000 referrals, 36% were for oncology referrals, 9% for hematology, 9% for neurosurgery, 8% for orthopedics, 7% for cardiology, and 5% for urology.

Physicians' explanations for 87% of referrals were attributed to a single reason: 37% - lack of medical equipment 23% - lack of needed pharmaceuticals, 14% - lack of diagnostic services, 6% - lack of specialized human resources, 3% - lack of rehabilitation services, and 16% either 7% - needed advanced center, 3% - due to very long waiting list, or 6% - other reasons (family pressure was 0.9%).

Of those referred for multiple reasons, physician explanations were: 29% - lack of medical equipment , 21% - lack of specialized human resources, 15% - lack of diagnostic services, 11% - lack of needed pharmaceuticals, 4% - lack of rehabilitation services, and 20% - other reasons. Other reasons were mainly 49% were for advanced center, 23% long waiting list, 14% for family pressure, 5.3% to avoid complications and legal issues

Conclusions Lack of equipment and pharmaceuticals were major reasons given for referrals, which is consistent with data on health system shortages. Secondary reasons were a lack of diagnostic services, human resources and rehabilitation services, also a major feature of the weak health system.

Immediate and serious sustainable investment in the health system in the Gaza Strip is needed in order to address health needs and increase access to quality health services in the local public health system and decrease the need for referrals outside of the Gaza Strip.

Word count: 453

48. Assessing roots of gender inequity at Ministry of Health referral level in Gaza

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Abstract was submitted by Anita Vitullo on November 30, 2015 (vituloa@who.int)

Background: Avoidable or remediable inequities in the use of health services restrict the right to health. A gender gap is observable among patients in the occupied Palestinian territory referred by the Ministry of Health (MoH) to other health centers. However, in Gaza, the female/male gap in total Ministry of Health referrals of Gaza patients widened in recent years: 45.5%-54.5% in 2013, 43.8%-56.2% in 2014 and 42.4%-57.6% in 2015. This study sought to examine health-seeking factors that may lead to gender-based inequities at the referral level, and to inform how to redress these inequities.

Methodology: A question guide was developed to elicit responses concerning the health system, social and cultural factors, or personal preferences regarding health access, using a human rights-based approach. Seven focus groups were conducted, 5 all-female, 1 male and 1 couple groups conducted in all 5 Gaza governorates (52 females and 14 males). Responses were recorded and coded for meaning. Semi-structured interviews were also conducted with 20 key informants: 4 female community representatives and 4 women volunteers, 8 with physicians (3 females and 5 males) and 4 referral committee members.

Results: A gender gap was found in requests for Ministry of Health financial coverage for Gaza referral patients in 2014 of 44%-56%. At specialty level, the gap fluctuates and can be explained by differences in disease patterns: oncology (males 45%, females 55%), MRI (males 57%, females 43%), nuclear medicine (males 41%, females 59%), orthopedics (males 56%, females 44%), and heart catheterization (males 68%, females 32%). Preliminary findings* at the health system level showed that a recommendation for an outside referral depends on health status of patient and urgency of case. Focus group participants did not consider gender discrimination as a factor, but said men have more access through *wasta* (connections) for speeding up procedures. Referrals frequently follow the failure of local treatment or surgery. In focus groups, women were not highly health literate, e.g. regarding disease, information procedures or pharmaceuticals.

Within households, most women were able to decide and could access health care. In a few cases husbands vetoed treatment for financial reasons or fear from past medical errors. Women's decisions to visit a doctor were constrained by the severity of sickness, family's economic situation, and support from husband/father or other family members. In most cases, mothers (more than fathers) take care of children when they are sick, follow up with them and travel with them to hospitals outside of the Gaza, if they are referred. Women's demand for referral outside Gaza was found to be similar to men's. Both lack trust in the existing health system. Poverty remains a barrier to health, even when health services are free, due to transportation costs.

Discussion: No deliberate gender bias was found at the highest referral level, indicating that the gender gap in Gaza is likely due to gender differentials in health-seeking decisions. The study

revealed that men are perceived as having greater capacity to play a role in increasing access and speeding referral procedures. Women make their health decisions according to their level of pain, financial resources and support available from family. Further multidisciplinary analysis is needed to assess the influence of social and other factors on women's health seeking.

* These preliminary findings relying on the researcher notes through the 7 focus groups. Final results will be concluded once all data analyzed

Word count: 531

49. Characterization and prevalence of metabolic syndrome among overweight and obese young Palestinian students at An-Najah National University

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Abstract submitted by Basma Damiri on November 16, 2015 (bdamiri@najah.edu)

Introduction: Metabolic Syndrome "MetS" is one of the main reasons for elevated mortality rates worldwide, and characterized by the presence of several factors including: obesity, dyslipidemia, elevated blood pressure, and elevated blood sugar. These factors play a major role in the development of cardiovascular diseases and diabetes mellitus. Several factors increase the risk for developing MetS such as: age, gender, and lifestyle. A university-based cross sectional study was conducted to characterize and establish gender adjusted prevalence of MetS among Palestinian adults at An-Najah National University "ANU" (18-24 years old), using International Diabetes Federation "IDF" and modified National Cholesterol Education Program-Third Adult Treatment Panel "NCEP-ATP III" definitions.

Materials and Methods: The total number of research subjects was 850 (352 males and 498 females), aged 18-24 years. Data were collected in two stages: the first stage included anthropometric and blood pressure measurements for all study subjects. The second stage included self-administered questionnaire and biochemical analysis for overweight and obese students (n=154). MetS was defined according to the modified NCEP/ATP III diagnostic criteria and IDF criteria.

Results: The overall prevalence of MetS was more pronounced when IDF definition (28.6%) was implemented compared to the modified NCEP-ATP III definition (24%) among overweight and obese university students at An-Najah National University aged 18-24 years old with no statistical differences between males (29.2% IDF, 25.8% NCEP) and females (27.7% IDF, 21.5% NCEP). The prevalence of overweight and obesity has reached alarming rate among Palestinian adults aged 18-24 years. The prevalence of individual MetS components among

overweight and obese adults were: 72.1%, for central obesity (53.9% males and 96.9% females) according to IDF and 42.9% (20.2% males and 73.8% females) according to modified NCEP-ATP III , 29.9% for elevated BPs (37.1% males and 20% females), 18.2% for high TG (27% males and 6.2% females), 74.7% for low HDL-Cholesterol (80.9 % males and 66.2% females), and 24% for IFG (24.7% males and 23.1% females). Low HDL- cholesterol, central obesity and raised blood pressure were the leading three common metabolic abnormalities among overweight and obese adults. There were no significant associations with geographic locality, house hold income, smoking, physical activity, or family history.

Conclusion: With the increase of BMI, the clustering of MetS components was remarkably increased. Therefore, more attention should be paid on the adult population at risk to reduce adulthood obesity and subsequent cardiovascular diseases. In conclusion, despite the lack of a uniform definition for MetS, this study has established that independently of the definition used, MetS is highly prevalent among Palestinian adults and associated with increasing obesity and age. The higher prevalence of MetS in Palestinian adults at ANU demands immediate intervention, given the potential for these adults to develop chronic diseases. More ethnic-specific studies are recommended in order to establish national-specific age and sex ranges for waist circumferences and other Mets risk factors.

Word count: 469

50. Implementation of national regulation for marketing of breast milk substitutes in State of Palestine

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Abstract submitted by Alaa Abu Rub on November 30, 2015 (aiaburub@usa.com)

Introduction: In 1866 the first Infant Formula has been invented, and the era of breast-milk substitutes started and invaded all markets, clinics, hospitals and homes, leading to catastrophic reduction in breast feeding rates increasing the morbidity and mortality of infants and young children.

After 115 years in 1981 WHO and UNICEF drafted and approved the International Code of Marketing of Breast-Milk Substitutes (ICMBMS) as a response to the World Health Assembly resolutions for protecting the breastfeeding. This code has been considered as the defense actions against the promotion of manufactured breast-milk substitutes, and formed the foundation and the reference for all by-laws regulations and laws for breast feeding protection.

Nutrition Department (ND)/ Ministry of Health (MoH) in cooperation with UNICEF developed the National Regulation for Marketing of Breast-Milk substitutes (NRMBMS), as a by-law of Public Health Law, and approved by the cabinet and indorsed by ND / MoH.

In this paper, light will be shed on the implementation steps of NRMBMS and on the comparative analysis for the exclusive breastfeeding rate before and after the implementation of NRMBMS.

Methods: A descriptive analysis for the implementation steps of NRMBMS has been conducted. In addition to comparative analysis for the exclusive breastfeeding rate before and after implementation of NRMBMS.

Findings: Before the application of NRMBMS, all health facilities in State of Palestine (SoP) were forfeit by the breast-milk substitute companies. Most of walls inside the health facilities were full of promotional calendars, watches, photos, posters that promote the baby foods including infant formulas, flow-on formulas and complementary foods. Direct promotional counseling to the lactating mothers and pregnant women by breast-milk substitute companies was conducted daily. The hands of health staff were full of promotional pens, gifts and brochures, in addition to free baby food samples. Furthermore, entertainment journeys were settle down among the health staff. The exclusive Breastfeeding (EBF) was at best situation 25%.

ND faced many obstacles including and not limited to resistance to change by health staff, a huge reluctance by the by breast-milk substitute companies, lack of commitment from the top management of MoH, threatening to the ND working staff and bribe trials.

ND started a training session on the NRMBMS to all health staff and related governmental staff such as pediatricians, general partitions, nutritionists, nurses, midwives, community health workers, health educators, meddle management, health inspectors, custom police department, consumer protection department, Palestinian standard institute, and others.

After two years of the implementation of the NRMBMS, all violations has been stopped, and the EBF rate has been raised to 39%. Now a day all governmental, UNRWA and NGOs health facilities are free of all types of violation for the ICMBMS, five hospitals in SoP has been recognized as Baby Friendly Hospitals and 23 other hospitals has been engaged in Baby Friendly Hospitals Initiative.

Conclusion: NRMBS is a powerful tool to increase the breastfeeding and the EBF rates and can decrease the morbidity and mortality of infants and young children as the Palestinian Model shows.

Word count: 495

51. Risky health behavior and practices among Palestinian youth in the occupied Palestinian territory (oPt)

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Abstract was submitted by Rami Al Dibis on November 29, 2015 (rdibs@pcbs.gov.ps)

Background Despite the observed good health status of Palestinian youth, such as the low prevalence of the chronic diseases at (3%) in 2014, and with 90% of young people reporting their health status as good in the same year these results fail to highlight the behaviors and unhealthy practices of young people which predispose them to disease later on in life such as tobacco smoking, eating unhealthily food, and not engaging in enough in physical activity.

Methods We utilized the Palestinian youth Survey 2015 (PYS2015), with 8025 households containing 5500 persons aged (15-29) years. Data collection was during the period 18/9-7/10/2015, Initial frequencies were used to inspect the data, followed by cross tabulations to ascertain differences among groups. SPSS version 19 was used in data analysis.

Findings The result shows that the percentage of youth 15-29 years old reported that they ever smoked reached 36%. A high of 24% reported that they were currently smoking. The results also show that the percentage of youth who did not engage in any physical activity of exercise for about an hour daily was about 77%. Four percent reported that their friends consumed alcohol and 2.5% reported that their friends used any type of drug. In addition, results demonstrate that the percentage of youth reporting not having breakfast daily was high 45%. The percentage of youth who said that, in their opinion, they have unsuitable weights reached 35% (24% over weight). With a significant differences with the most of the previous indicators by gender, region (west bank and Gaza strip) and age group of youth. i.e. data shows that practicing smoking among males are significantly higher than females, also the youth whom smoking in the West Bank shows higher than Gaza Strip's youth.

Interpretation The results indicated the presence of unhealthy behaviors of young people affect their health status on a some of health issues such as smoking, unhealthy food and lack of exercise, which calls for the need for interventions to educate young people to reduce these behaviors

Word count: 335

52. Prevalence of waterpipe tobacco smoking and associated factors: A cross-sectional study among Palestinian university students

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Abstract was submitted by Marina Tucktuck on November 27, 2015 (mtucktuck1991@gmail.com)

Background: Very little is known about the burden of waterpipe tobacco smoking (WTS) among university students in the occupied Palestinian territory (oPt). The objective of this study was to estimate the prevalence of WTS among university students in the West Bank and Gaza Strip regions in the oPt and to investigate the socio-demographic and university-related factors associated with current WTS status.

Methods: A cross-sectional exploratory study was conducted among a sample of 1,891 university students, from five selected universities in the oPt (three from the West Bank and two from the Gaza Strip). Students were invited to partake in the study through completing a self-administered web-based survey during the second semester of the 2014-2015 academic year. The survey contained questions on socio-demographic and university-related characteristics as well as on WTS behavior and patterns, which were taken from the Global Adults Tobacco Survey. Proportions were calculated for the prevalence of current WTS and three logistic regression models for total sample, men and women, were computed to obtain the adjusted odds ratio (OR) and the 95% confidence interval (CI) for the factors associated with current WTS status.

Findings: The mean age of the study sample was 20.1 ± 2.0 with an approximately equal gender distribution (50.9% women). Overall, 30.0% of participants were current tobacco smokers and more than half (57.8%) reported ever smoking tobacco from a waterpipe. The prevalence of current WTS among the study sample was 24.4%, with a significantly higher prevalence among men (36.4%) in comparison to women (12.9%). Multivariate logistic regression model for the total sample revealed that men had higher odds of being current waterpipe tobacco smokers compared to women (OR=4.202, 95% CI=3.220-5.482). Students from the northern, central and southern geographic areas of the West Bank had higher odds of being current waterpipe tobacco smokers compared to those who resided in the Gaza Strip (OR=3.204, 95% CI=2.311-4.443; OR=2.663, 95% CI=1.906-3.722 and OR=2.805, 95% CI=1.991-3.951, respectively). Both men and women studying at the faculties of arts and humanities had higher odds of being current waterpipe tobacco smokers compared to those studying at the faculties of sciences and health sciences (OR=1.280, 95% CI=1.004-1.633). Students who had a university cumulative average of ≤ 69.9 and 70.0-79.9 had higher odds of being current waterpipe tobacco smokers compared to those who had an average of ≥ 80 (OR=2.943, 95% CI=1.964-4.410 and OR=1.799, 95% CI=1.364-2.359, respectively). Men who reported a very good to excellent economic status had higher odds of being current waterpipe tobacco smokers compared to those who reported a poor to satisfactory economic status (OR=1.835, 95% CI=1.268-2.655).

Interpretation: The prevalence of current WTS among university students in our study sample is high, marking WTS as a public health concern for this young age group. Given that WTS seems to cluster among university students with specific characteristics, interventions to curb the rise in WTS should be tailored differently to suit men and women and target the regional variation in the WTS behavior among youth in the oPt.

Word count: 490

53. Implementation of maternal and child health e-Registry in Palestine

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Abstract was submitted by Buthaina Ghanem on November 30, 2015 (ghanembu@who.int)

Background: A needs assessment was conducted to identify the gaps in the current reproductive health information in Palestine. The results showed that there is substantial data collection in antenatal, perinatal and postnatal care. However, very limited information is exchanged between primary and secondary care thereby jeopardising the continuum of care. Furthermore, data is not utilized to benefit service provision or for public health purposes. Reporting to the national level consists mostly of aggregated, monthly reports published annually, and data is not utilized for management, improving quality of care, or feedback to health care providers. Currently, care providers spend almost one third of their time recording information manually on paper records. There is no legislation on health data confidentiality and no national agreement on essential interventions, indicators or a minimum dataset to be collected. PNIPH, in collaboration with the NIPH, aims to introduce a Maternal and Child eRegistry in Palestine.

Methods Introducing eRegistry in Palestine has been planned and is being implemented in a consensus-driven process with stakeholders in maternal-child health. A needs assessment tool has been developed in the international project and adapted to the Palestinian context. Four assessments using this tool have been completed with MoH and UNRWA in the West Bank and Gaza. A database has been developed describing the existing reproductive health facilities, available services, human resources, and infrastructure using an inventory form. Antenatal and postnatal guidelines and corresponding care algorithms were discussed and updated in a series of meetings with stakeholders including practicing physicians, obstetricians, pediatricians, midwives, staff nurses and community health workers. Customized interactive checklists are being finalized that correspond with the revised guidelines. Governance structure to protect women and children's privacy and confidentiality has been developed. Training plans have been developed; all training templates are being finalized, the estimated number of care providers to be trained in West Bank and Gaza is 1300. DHIS2, an open source information system, is the software platform for the eRegistry. All infrastructure needs including computers, servers and

connectivity supplies are being procured by PNIPH/WHO. Internet in the clinics is being secured by Ministry of Health. A phased implementation will be carried out starting with 77 clinics in 6 districts as Phase 1. Efficiency and effectiveness of the customized interactive checklists, feedback to care providers and feedback to women will be evaluated through three randomized controlled trials.

Finding The initial needs assessment and inventory conducted were crucial to identifying gaps and developing plans. Early involvement of stakeholders is essential for successful implementation and sustainability. Finalization of governance structure and guidelines took more time than expected to reach consensus. Care professionals in the West Bank and Gaza showed common ground in willingness to participate. The security situation should be included in risk assessment and multiple scenarios should be available to ensure the implementation of all activities.

Interpretation: We expect to present the first data from the eRegistry indicating the quality and coverage in Palestine during the conference.

Word count: 487

54. Governance guidance for an eRegistry for maternal and child health: Lessons from Palestine

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Background: The eRegistry for maternal and child health is an electronic registry system developed for the collection, analysis, retrieval, storage, and dissemination of information on health determinants and outcomes for women and children with the purpose of improving health care provision and public health surveillance in Palestine. Given the highly sensitive nature of reproductive health information, however, careful attention to ethical and legal considerations is essential. Mapping the legal, regulatory, and ethical landscape using a situation analysis tool tailored for the Palestinian context was undertaken in order to identify gaps, opportunities, and actions necessary to ensure an ethical and lawful framework for an eRegistry.

Methods: This research utilized an exploratory situation analysis tool (SAT) in Palestine to map

the current legislative, regulatory and governance environment. The primary objective was to assess, document, and analyze the legal and ethical landscape in Palestine. Specific focal topics addressed by the SAT include identifying relevant legislation (i.e., civil registration, data privacy, health registries, public health law, etc.), existing governance structures, accountability, and oversight bodies (i.e., ethical review committees, data protection authorities), and data quality and security policies. The Palestinian National Institute of Public Health (PNIPH) completed the SAT and conducted workshops with relevant stakeholders including the Ministry of Health's Legal Affairs department, PNIPH staff, and other legal experts.

Findings: The findings from the SAT reflect Palestine's current situation with respect to existing laws, accountability and oversight bodies, and data collection protocols and policies concerning data privacy and security. Existing Palestinian legislation relevant to health registries includes Article 4 of the General Statistics Law (2000) which honors data confidentiality and individuals' privacy. The Penal Law No. 16 of 1960 addresses the disclosure of confidential information while Article 355 specifically states that anyone disclosing official confidential information to unauthorized persons is unlawful and may result in imprisonment. In addition, the Public Health Law (2004) addresses general maternal and child health issues in Articles 4 and 5. The SAT investigated relevant oversight and accountability bodies (e.g., ethical review board) that may be relevant to an electronic maternal and child health registry. Finally, a review of existing data privacy protocols and policies noted that few formal protocols (i.e., privacy manual) or policies regulate data collection and access practices.

Interpretation: The findings gathered using the SAT pinpoint specific areas within Palestine's legal and regulatory framework that may be strengthened. The eRegistry Governance Guidance Toolkit (GGT), predicated on the SAT content, outlines responsible data stewardship practices and provides assistance in developing protocols and policies in lieu of specific existing laws by providing a framework to ensure the protection of women and children's privacy. Developing effective governance that protects women and children's privacy and confidentiality is essential for maintaining public trust and ensuring the long-term success of a registry.

Word count: 458

55. Determinants of and changes in catastrophic health expenditure in the occupied Palestinian territory: An analysis of ten rounds of the Palestinian households expenditure and consumptions surveys (1996 – 2011).

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Abstract was submitted by Majdy Ashour on November 30, 2015 (m.ashour2@unrwa.org)

Background: Measuring Catastrophic Health Expenditures (CHE) is commonly used to assess the financial protection from the risk of health related conditions, which is considered as a principle performance goal of any health system. Previous research has assessed the incidence and intensity of CHE in the occupied Palestinian territory (oPt) from 1998 to 2007; however, no research has ever assessed the occurrence CHE borne by different populations' groups in the oPt. The objective of this paper is to examine the changes in the occurrence of CHE among different groups of the Palestinians from 1996 to 2011, which is a period of increasing political turmoil, transformation of the national health system, and economic hardship faced by the population.

Methods: The repeated cross-sectional series of Palestinian Households Expenditure and Consumption Survey conducted by the Palestinian Central Bureau of Statistics for ten times from 1996 to 2011 is analyzed. Each of the surveys asks detailed questions about household's expenditure, including spending on health, using a diary approach.

CHE was measured using a threshold of spending 10% or more of the households' resources on health care. Total household expenditure was used as a proxy of households' resources. The occurrence of CHE was traced from 1996 to 2011 and was compared across different expenditure quantiles, dwellers of urban/rural/refugee camps, and the characteristics of the households heads in the oPt and within both of the West Bank and the Gaza Strip.

Findings: The occurrence of CHE in the oPt has increased from 7.3% in 1996 to 8.2% in 2011. This increase was encountered in the West Bank and in the Gaza Strip; however, the occurrence of CHE in the latter has been consistently lower than in the former with statistical significance. The occurrence of CHE has been consistently higher among the worse-off expenditure quantiles in the oPt and in the West Bank than among affluent households. The occurrence of CHE in the Gaza Strip among different expenditure quantiles was statistically insignificant from 1997 to 2004, and from 2005 onward the economically vulnerable groups of the households have become less exposed to CHE than the affluent households. The occurrences of CHE in households which lived in the rural areas of the West Bank were consistently higher than others. Households headed by illiterate family members in the West Bank were consistently more exposed to CHE than others; while the opposite emerged in the Gaza Strip.

Interpretation: The findings should be interpreted within the path dependence of health care system in the oPt and the unique Palestinian context. For example, the overburdened rural populations in the West Bank could be linked to difficult access to health services. The lower occurrence of health-care related financial catastrophe in the Gaza Strip than the national average and the trend toward leveling down inequalities among the more vulnerable households, especially after increasing the population socioeconomic adversity, may point to an emerging paradox of resilience in the Gaza Strip, which should be investigated carefully from the perspectives of both the health system and social lives.

Word count: 499

56. The direct medical cost of type II diabetes in the West Bank of Palestine – 2014

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Abstract was submitted by Rula Ghandour on November 30, 2015 (rghandour@birzeit.edu)

Background There is a growing burden of diabetes globally and more specifically in the Eastern Mediterranean Region. In 2030, it is projected that diabetes will be the 7th leading cause of death worldwide. More than 80% of diabetes mortality is within low and middle income countries (LMIC). Type 2 diabetes (T2DM) accounts for 90% of people with the disease. In addition to the epidemiological burden, T2DM has a substantial economic burden. The nature of the disease – being progressive and long lasting – entails high costs on the health care system and on individuals suffering from the disease and their families. Several studies on costing of diabetes and its complications were conducted mainly in developed countries showing this high burden; yet, there is limited evidence on this burden in LMIC, including Palestine. The aim of this study is to identify the direct medical cost of T2DM in the West Bank (WB) from the health sector’s perspective, focusing on the Ministry of Health MoH).

Methods A modelling study is used to estimate the cost of regular management of T2DM in the WB for the year 2014. The analysis was done from the perspective of the Palestinian MoH. Palestinian guidelines for diagnoses and management of T2DM, and the standards of medical care for diabetes published by the American diabetes association in 2014 were both used as a reference for needed services for all T2DM patients. Those mainly include: outpatient visits, hospitalization, procedures, diagnostic tests, lab investigations and medications. Assuming that all T2DM patients will utilize the standard care, prices and associated costs were collected from different local data sources – mainly in local currency (NIS) and then converted US\$.

Findings In 2014, there was 201,751 people with T2DM in the WB (prevalence = 17.9%). The direct medical cost for regular management of these patients was estimated to be around US\$ 28 million for that year. The cost per patient was around US\$ 140 divided as follows: US\$ 14 for consultation, US\$ 40 for medications, US\$ 21 for lab tests, and US\$ 65 for emergency hospitalization. These costs exclude the cost incurred by managing specific T2DM complications. In 2013, per-capita health care expenditure in Palestine was US\$ 293. Regular management of diabetes constituted around 9% of these costs.

Interpretation The results show the high economic cost of T2DM in the WB and its burden on the health sector. T2DM is responsible for a high portion of health care expenditure. This is the

minimum cost incurred by this disease, other costs - not included in this study - are the complications' cost and the costs incurred by the patients themselves and their families, those include both medical and non-medical.

Palestine is a LMIC, with very limited resources, and with the government and household being the major sources for health care expenditure, there is an urgent need to take an action in terms of both primary and secondary prevention of this disease. It should be on the top of the public health priority agenda.

Word count: 496

57. Feasibility assessment of integrated road traffic casualties registry in West Bank, Palestine

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Abstract submitted by Mohammad Baniode on November 26, 2015 (baniodem@who.int)

Background Road traffic casualties and risks are poorly quantified in the West Bank, Palestine. Understanding the epidemiology of road traffic deaths and injuries in Palestine is critical to informing sustainable research and policy initiatives aimed at reducing the personal and societal burden of road traffic accidents. The aim of this study was to provide a first-ever overview of road traffic casualties (RTC) surveillance systems, and to assess the feasibility of establishing an integrated RTC registry in West Bank to provide reliable data to decision makers.

Methods General assessment methodology for surveillance systems and registries (World Health Organization and Center for Disease Control and Prevention, USA) were used. The assessment took place in 2014 in collaboration with the Palestinian Ministry of Health (MoH) and Ministry of Interior. Qualitative methods were used, including semi-structured questionnaires, in-depth interviews and review of grey literature.

Findings At least five stand-alone surveillance systems operated by different agencies in the West Bank collect data related to road traffic accidents, including MoH, Palestinian Civil Police (PCP), emergency medical services (Palestine Red Crescent Society and Palestinian Medical Relief Society) and Palestinian Insurance Federal. These systems do not have a common set of indicators, no formal case definitions or standard operating procedures (SOPs). There is a lack of quality assurance systems at all levels. There are no formal guidelines to data collectors on completing the data collection forms; there is minimal training of stakeholders involved on data collection for RTC-IS. There are large discrepancies in reported casualties: for 2012 PCP reported 120 fatalities, whereas MoH reported both 34 and 112 from separate sources of data. Privacy concerns hinder some organizations from sharing data. MoH and PCP data are sufficiently complete to support a robust integrated registry.

Conclusions An integrated registry for RTC is feasible. The establishment should comprise a framework for all essential parts of a registry, including stakeholder relations and a comprehensive quality assurance system. Recommended steps toward technical improvement include establishing a multisectoral working group; establishing an RTC-IS data warehouse; developing a common set of indicators and case definitions for crash-related death, injury and disability; revising data collection forms and developing SOPs for the whole continuum of data flow, including quality assurance. Finally, the possibility of incorporating RTC data from the Gaza strip should be examined.

Word count: 378

58. Measuring subjective well-being: Development of the Subjective Well-being Assessment Scale in West Bank and Gaza Strip.

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Abstract submitted by Jamal Dakduki on November 25, 2015 (gamal33@walla.co.il)

Background The connection between subjective well-being (SWB) and the development of people and nations across the world is today recognized by many different organization (e.g. World Health Organization, European Commission, World Bank, International Monetary Fund). SWB can be defined in terms of good mental state, including all of the various evaluation, positive and negative, that people make of their lives and the affect reaction of people to their experiences (Diener, 2006). Such definition provided a wider framework for the comprehension of SWB by including the evaluation of both objective and subjective *qualities* that contributes to the well-being of individuals and by excluding the simplistic idea of gross domestic product (GDP) as a unique measure of happiness. In fact, a large number of studies acknowledge the importance of SWB on many good outcomes (e.g. life-expectancy, immune system, adjustment to traumatic events). Despite its paramount importance, to our knowledge there is paucity of reliable quantitative instrument able to measure SWB in the Gazan context meaning that the call for internationally monitoring (Stiglitz et al., 2009) levels of SWB cannot be satisfied

Method The present study is aimed at developing the Subjective Well-being Assessment Scale (SWBAS): a brief quantitative tool aimed at measuring SWB in the Palestinian population in Gazan, West Bank and Israel. Following recommendations of the Organisation for Economic Co-operation and Development (OECD) as well as the theoretical socio-psychological traditions, the measure was conceptualized and operationalized as assessing three inter-related domains: *life evaluation* (reflective assessment on a person's life), *affect* (individuals' feeling and emotional states) and *eudaimonia* (sense of meaning and functioning in life). The sample (N=423) was

composed of Arab-Israeli, Palestinians from West Bank and Palestinian from Gaza (male-female rate was 32-68%, mean age = 35.3±8.5). Data analysis entailed common procedures of exploratory and confirmatory factor analysis along with reliability analysis. Finally, scores to General health Questionnaire (GHQ-12) and the Positive and Negative affect (PANAS-20) were included in order to test concurrent and divergent validity.

Results Data analyses supported a model of measurement for the Subjective Well-being Assessment Scale composed of 24 items loading on six different underlying factors: *positive functioning, negative functioning, spirituality and religion, social functioning, human security, economic situation*. Results of exploratory and confirmatory factor analyses ($\chi^2(227)=373.3$; NC= 1.6; RMSEA= .038; SRMR = .048; NNFI =.97; CFI = .97) suggested that the questionnaire is psychometrically robust, the measures were generally reliable ($\alpha_{\text{MIN}} - \alpha_{\text{MAX}} = .71-.79$) and scores resembled statistically normal distributions.

Interpretation Given the growing interest in the concept of SWB, the availability of a brief and psychometrically robust instrument should be of great value in monitoring trajectories of psychological functioning and perceptions of “happiness” in the Palestinian population. In addition, the opportunity to gather reliable information of SWB contributed to the process of data- exchange and it enables the comparison of findings within the scientific and international community.

Words count: 461

59. Post-traumatic stress disorder among health care providers following the Israeli attacks against Gaza Strip in 2014: A call for immediate policy actions

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Introduction: Post-traumatic stress disorder (PTSD) is a common, disabling disorder that appears after the exposure to a traumatic experience. Post-traumatic stress leads to a pattern of symptoms that include a delayed response to an acute stressful and a life-threatening event or situation, such as combat exposure during war time. Individuals exposed to combat exposure in a war zone are not only at risk to experience trauma but typically they may experience multiple traumatic experiences. Gaza Strip was a target for several Israeli aggressions in the last decade. The last and the worst was the offensive of the summer of 2014. Hospital personnel working on Gaza hospitals have encountered several stressors during the war time that included personal threats to their lives, their families and their clients, especially that many hospitals were targets for bombardment by the Israelis.

Purpose: This study aimed to assess the level of PTSD and to examine the relationship between exposure to war stress and posttraumatic symptoms among health care providers following Israeli offensives against Gaza Strip in 2014.

Methodology: A cross-sectional design was used for this study. We targeted all nurses and doctors working in three governmental hospitals in Gaza Strip and worked with victims of the last war, more specifically, those who were working in emergency departments, intensive care units, operating rooms, surgical departments, and burn units. A demographic sheet and Impact Event Scale-Revised were used in this study. The Impact Event Scale-Revised has three subscales; intrusion, avoidance, and hyper-arousal.

Results: The results showed that 291 (89.8%) out of 324 participants had scores more than 35 (threshold cut-off point) on Impact Event Scale-Revised. Scores ranged from zero to 80 with a mean of 52.13. Females had higher levels of stress (55.79) than males (51.63) and nurses (54.85) had more stress than physicians (47.38). The most frequent symptoms of trauma subscales was “Avoidance” (mean=20.04), followed by “Intrusion” (mean=17.83), and then “Hyper-arousal” (mean=14.27). Level of trauma symptoms were not affected by place of living, hospital of work, while level of education had impacted level of trauma.

Conclusion: The findings showed that health care providers suffered from severe posttraumatic symptoms after exposure to a prolonged war stress. This level of trauma among health care providers warrants intervention programs to reduce stress and trauma among Gaza health care providers after the war.

Word count: 383

60. Human insecurity and exposure to political violence among Palestinian Students

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Abstract: Introduction: Human development emerges amongst cultures which allow citizens long term independence, freedom and basic needs fulfillment; Palestinians have been exposed to political violence due to ongoing Israeli occupation. The tip of the iceberg is not only what we see but the consequences of political violence is prevailing to pronounce; political violence results in many physical, psychological and emotional stressors that pull the Palestinians at individual level from the ease to dis-ease. The colony injustice actions cause disruption of health, as well as economic, cultural, social and environmental services at the community level

Methods: A cross-sectional survey was conducted among 572 randomly selected college students at two major Palestinian universities. human insecurity as dependent variable was examined with related independent variables. Descriptive analysis, Pearson Chi-square and binary logistic regression were performed using SPSS software version 17.

Results: results shows a statistically significant relationship ($p < .005$) between reporting high insecurity among Bethlehem and Birzeit Universities' students and the type of identity, mother's education, place of residence, insurance status, crossing checkpoints, ability to travel abroad, standard of living, and scoring on violence and distress scale. Logistic regression results revealed that students whose mothers' educational level was above secondary were less likely to have high insecurity than among those below secondary education (OR= 0.560, 95% CI =0.343-0.916). Students living in Ramallah and its suburbs were less likely to have high insecurity than those living in Jerusalem (OR= 0.418, 95% CI =0.270-0.647). Students who couldn't travel abroad because of Israeli occupation practices were nearly 3 fold more likely to have high insecurity than those who could travel (OR= 2.616, 95% CI = 1.231-5.559). additionally, those who couldn't travel abroad because of financial reasons were twice more likely to have high insecurity than those who could travel (OR= 1.974, 95% CI = 1.248 - 3.124).

Students exposed to high violence and students who scored high on the distress scale were almost twice more likely to have high insecurity (OR= 1.737, 95% CI = 1.194 - 2.527 and OR= 1.629, 95% CI = 1.042 - 2.549 respectively) compared to students exposed to low violence and those who scored low to moderate on the distress scale.

Interpretation: College students tend to face travel restrictions as they try to get to their Universities. Restrictions coupled with political violence, poor economic conditions put a lot distress on students affecting their everyday life and health. This study attempted to get an

understanding of what goes on with college students under ongoing injustice and human right violation caused by prolonged occupations. The results confirmed the association between political violence, individual distress, and travel restrictions with human insecurity. These results concur with prior studies that had also revealed the low quality of life for Palestinians. Treatment should be aimed at eradicating the root cause which is occupation. In other words, true peace and justice resolution of the current conflict that leads to an autonomous Palestinian state.

Word count: 498

61. The effect of exposure to war-traumatic events, stressful life events, and other variables on the mental health of Palestinian children and adolescents in the 2012 war

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Abstract was submitted by Basel El-khodary on November 30, 2015 (basel_khdry@hotmail.com)

Background: this study aims to investigate the effect of exposure to war-traumatic events on the children's and adolescents' mental health in the presence of other stressors such as stressful life events, exposure to traumatic events (not related to war trauma. e.g. being in a car accident or have serious illness), and poverty.

Methods: The sample consists of 1029 students aged 11-17 years old. Of them 496 (48.2%) were male and 533 (51.8%) were female. War-traumatic events were measured by *War-Traumatic Events Checklist (W-TECh)* including three categories: personal trauma, witnessing trauma to others, and seeing demolition of property. Stressful life events were measured by *stressful life events scale*, exposure to traumatic events (not related to war-trauma) were measured by *UCLA PTSD index for DSM-IV (child version)*. Posttraumatic Stress Disorder was measured by *Post-Traumatic Stress Disorders Symptoms Scale (PTSDSS)*. Finally, depression was measured by *Depression scale*.

Findings: 88.4% (N: 909) experienced personal trauma, 83.7% (N: 861) witnessed trauma to others, and 88.3% (N: 908) have seen demolition of property during the war. Boys significantly showed more exposure to personal trauma, witnessing trauma to others, seeing demolition of property, and overall traumatic events compared to girls. On the other hand, girls showed more exposure to stressful life events, exposure to trauma (not related to war-trauma), PTSD, and depression. The results also demonstrated that the prevalence of PTSD diagnosis according to DSM-V is 53.5% (N=549). In addition, there is a positive correlation between the age in one hand and exposure to war-traumatic events and stressful life events in the other hand. Furthermore, there is a positive correlation between family size in one hand and exposure to war-traumatic events and PTSD in the other hand. In contrast, there is a negative correlation between the family income in one hand and stressful life events, exposure to traumatic events not related

to war trauma, PTSD, and depression in the other hand. Finally, exposure to war-traumatic events, experience stressful life events, and exposure to traumatic events not related to war-trauma have positive correlations with PTSD and depression.

Conclusions: Stressful life events and exposure to traumatic events not related to war-trauma may consider as risk factors for PTSD and depression.

Word count: 361

62. Poverty as trauma: Pain correlates with loss of income following traumatic limb loss - a retrospective study of amputated Palestinian war-casualties in Gaza

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Abstract submitted by Mads Gilbert on November 30, 2015 (mads.gilbert@gmail.com; mads.gilbert@gmail.com)

Background During four separate Israeli military attacks on Gaza (2006, -09, -12 and -14), around 4.000 Palestinians were killed and more than 17.000 injured. An unknown number suffered traumatic amputation of one or more extremities. In addition to loss of body parts, loss of work and income further complicated patients' lives after trauma. We have reported preliminary data on the somatic consequences (LPHA 2015), showing that eight of ten amputees had uni- or bilateral lower limb amputations, most frequently suffered following attacks with drone-carried weapons. 1/3 was amputated during 'ceasefire' periods. We also found that a high number of debilitating extremity injuries were in a young civilian population where needs of rehabilitation were difficult to meet due to limited local resources caused by the long-lasting siege of Gaza. We now report long-term functional and psychosocial consequences of traumatic amputations in Gaza war casualties.

Methods We studied 165 Palestinians in Gaza with traumatic amputations sustained during Israeli military attacks in the period 2006-2014. We explored the amputees' self-assessed health, socioeconomic status, anatomical location and level of amputation, co-morbidity, date and mechanism of injury. We used two different, well-validated self-administrated screening questionnaires (SF-36, GHQ-12) combined with a detailed clinical examination of each amputee. The study was performed at a local rehabilitation center in Gaza City. We used standardized records and questionnaires in Arabic. Data were analyzed with SPSS. The study was approved by the Palestinian Ministry of Health in Gaza, Al-Shifa Hospital's board and the director of the Artificial Limb and Polio Center Gaza. All participants included in the study completed a written consent form.

Findings Pain was reported more frequently in patients unable to continue work due to the traumatic amputation compared to patients unemployed for other reasons, also when adjusted for family income. We found a significant correlation between reported pain and poverty (income <800 shekels/month). Pain correlated with self-reported GHQ-12-scores indicating psychological distress. There were no correlation between GHQ-scores indicating psychological distress and the extent of the initial trauma. Use of prosthetics significantly decreased GHQ-scores indicating a lower level of psychological distress among users of artificial limbs.

Interpretation Self-reported pain after loss of limb(s) in 165 Palestinians in Gaza amputated following Israeli military attacks, correlated with psychological distress and deteriorated occupational and financial life situation after the amputation(s). Use of prosthesis seemed to ease the psychological distress. Poverty and unemployment caused by amputations and disability may be a more important trauma than the physical amputation itself.

Word count: 407

63. A study on the impact of detention on the family's of Palestinian detainees in the Israeli prisons, 'Secondary victims of tortures, pain & suffering'

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Abstract submitted by Wisam Suhwal on November 25, 2015 (wisam.sehwal@trc-pal.org)

This study aims at identifying the psychological, socio-economic and functional impacts of torture inflicted upon the married Palestinian detainees in the Israeli Jails on their families including children and women. The study attempted to answers to the following questions:

- 1- The most frequent violations to which detainees' families are subject to during detention and visits to the detainees.
- 2- The most frequent psychological impacts of these violations.
- 3- Variation of sufferings and impacts among the family members. And the most adaptive methodologies developed by families.

To achieve the goal of this study, questionnaire was developed by the researchers and distributed among the individuals of the research sample, which consisted of 358 families.

The study revealed the following:

- a- There is a relationship between the kind of violations suffered and the degree of mental suffering.
- b- 57.9% of the surveyed families suffered from PTSD; 22.5% from moderate to severe depression; 10.5% from severe depression; 44% from tension; 41% from obsessive compulsive disorder; 35% from fear; 35% from aggressive behaviors and 35% from biological symptoms (somatic) resulting from the mental suffering.
- c- The study highlighted that children are more psychologically affected than adults as 80% of them were revealed to suffer from nightmares and 59% suffer from aggressive behaviors.
- d- 75% of family members lost their source of love and care; 53% lost their protection and 52% lost their source of income.
- e- The most important ways adopted by families to dilute the pressure are drawing closer to Allah “82%”, using sedatives ‘66%’ or seeking mental health services “3%”.

The study aspires to suggest solutions to suit the needs and sufferings of these families.

Word count: 270

64. The experience of Palestinian children facing traumatic events the case of a village under military occupation: A descriptive phenomenological study

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Abstract submitted by Sabrina Russo on November 28, 2015 (sabrinarusso@najah.edu)

Background: Understanding the effects of living in a protracted conflict on children is vital to providing appropriate mental health interventions. This study aimed to explore the phenomenological experience of children facing repeated traumatic events in a Palestinian village in close proximity to both an Israeli settlement and the separation wall by adopting a qualitative approach. The popular non-violent resistance campaign enacted by the village population in the form of weekly protests of the construction of the separation wall has brought on severe and often violent reactions by the Israeli military and settlers. This research sought to provide insight into how children of this village are psychologically affected by their experience in a consistently tense environment, taking into consideration the complex set of individual, cultural, economic, and social factors that influence the effect and manifestations of trauma.

Methodology: A qualitative phenomenological descriptive design was utilized to explore the lived experience of Palestinian children from the target village, and data collected was analyzed using Giorgi's phenomenological psychology method. Fifteen children participated in the study through in-depth interviews and were selected using purposive sampling.

Findings: Three major themes emerged from the children's interviews: (1) Exposure to traumatic events indicated by life threats, witnessing of violence, direct violence, deprivation of

freedom, and a lack of safety; (2) Normalization manifested by role-playing the traumatic events, acting out violence and underestimation of danger; and (3) Resilience indicated by feelings of belonging and self-efficacy as well as awareness of the political situation and trust in adults.

Interpretation: The findings of the study show that Palestinian children are, in fact, exposed to a great extent to the traumatic events occurring in their environment and they show typical manifestations of trauma in children, such as role-playing the traumatic events. However, the children participants of the study also demonstrated resilience and coping mechanisms often as a result of their awareness of and participation in the daily struggle against the Israeli occupation as well as their strong ties to and trust in adults. Children living in protracted conflict situations may normalize their trauma, but when those children are part of a community characterized by resistance and agency in the struggle for freedom and realization of their human rights, resiliency emerges to play an important role in how the trauma is dealt with. Further understanding of the experience of the Palestinian children facing traumatic events is necessary in order that decision makers and service providers can offer appropriate and holistic support to children in similar situations.

Word count: 414

65. Barriers to accessing and using mental healthcare services for Palestinians with mental health problems residing in refugee camps in Jordan: A qualitative study

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Aim Our aims were to identify the barriers to the access and usage of mental healthcare services by Palestinians with mental health problems (MHP) residing in the Baqa'a refugee camp in Jordan and to formulate recommendations to overcome such barriers.

Background The United Nations Refugee Agency (UNHCR) reported that there were approximately 19.5 million refugees worldwide in 2014 of which 5.1 million (9%) are Palestinian. 2.1 million Palestinians are reported to be residing in Jordan, of which 370,000 live in refugee camps. The Baqa'a refugee camp is the largest in Jordan, home to some 104,000 Palestinians.

Refugees experience external displacement and this combined with other stressors such as conflict in their territory of origin, the way that they are received by their host nation, dilapidated and squalid living conditions in refugee camps (as a result of overcrowding and underfunding), poverty and unemployment can all contribute and conspire to rendering these people vulnerable to developing MHP. MHP are overrepresented in refugee groups compared with the general population. Indeed, recent research has revealed that up to 43% of refugees have experienced some form of mental illness or distress.

The United Nations Relief and Works Agency for Palestine Refugees in the Near East (UNRWA) are '*Painfully aware of the lack of mental health care provision*' for Palestinians in refugee camps in the Middle East. Compounding this issue further are barriers to accessing and using mental health services. Barriers to the use of mental health services in Arab-refugees are well documented in the literature however few studies have been conducted hitherto to identify barriers for Palestinians with MHP residing in refugee camps in Jordan.

Methods 16 qualitative, semi-structured interviews were conducted with healthcare professionals working at health centres for Palestinian refugees in Jordan in May 2015, 14 of which were in health centres at Baqa'a refugee camp and the remaining two at the headquarters of UNRWA in Amman, Jordan. All the interviews were recorded and transcribed and thematic analyses conducted. Written informed consent was obtained from participants and the study was ethically approved by UNRWA and the University of Leeds.

Results Resource and financial deficits were the most common barriers reported by interviewees (16/16, 100%). Sex (15/16, 94%), stigma and religion (12/16, 75%) and culture (10/16, 75%) were also major barriers to the access and usage of mental healthcare services by Palestinians with MHP in Baqa'a refugee camp as reported by participants.

Discussion Notwithstanding the limitations of our study (which to the best of our knowledge is the first of its kind) our results have revealed that there were numerous major barriers for Palestinians with MHP in the Baqa'a refugee camp accessing and using mental health services. This, we feel, has important implications for policy and provision of mental healthcare services for Palestinians residing in refugee camps in Jordan. Recommendations to overcome such barriers include increasing resource allocation for mental healthcare provision, education to challenge mental health stigma and encourage help-seeking behaviour, and better communication and improved understanding between healthcare professionals and faith healers/Imams.

Word count: 500

66. Evaluation of contraceptive use practices in family planning services for Palestine refugee mothers in Gaza : A cross sectional survey

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Abstract was submitted by Camille Vernoooy on November 30, 2015 (C.VERNOOY@unrwa.org)

Background In Gaza, the United Nations Relief and Works Agency for Palestine Refugees in the Near East (UNRWA) provides primary health care to 1.2 million people, including essential maternal health care and family planning services. The objectives of UNRWA family planning services are to improve maternal and infant health by encouraging birth spacing and preventing multi-parity. We evaluated current contraceptive practices in Gaza to identify gaps in these services.

Methods A cross-sectional survey was conducted by trained nurses from June to August 2015. Participants were Palestine refugee mothers who attended well-baby clinics with their youngest child (aged 2 months through 5 years) at 21 UNRWA health centers in Gaza. An estimated sample size of 2359 participants was calculated based data on contraceptive use prevalence of 47.1% in Gaza in 2010, using an Epi Info sample size calculation. Mothers were interviewed and retrospective data from health records was used as supplement. All participants provided verbal informed consent. A multiple logistic regression was conducted to test if maternal age and parity predicted contraceptive use. A linear regression was conducted to analyze the relationship between previous contraceptive use and birth interval, birth weight, and gestational age.

Findings Data was obtained from 2359 mothers, with a mean age of 29.4 (± 6.2) years. Of them, 52.8% were using modern contraceptives at the time of the survey, 18.6% were using traditional

methods, and 28.6% were not using any contraceptive method. The most common modern contraceptive was intrauterine device (47.4%), and UNRWA was the provider for 92.2% of women currently using modern contraceptives. The most common reasons for not using contraceptives were child wish and pregnancy (24.5% and 23.2%, respectively); 17.9% of women reported that family or husband opposition was the main reason for not using contraceptives.

Compared with women with <3 pregnancies, women with 3-6 pregnancies are significantly more likely to use contraceptives ($p < 0.001$; aOR=2.09, CI (1.72 – 2.54)), as are women with >6 pregnancies ($p < 0.001$; aOR=2.47, CI (1.67 – 3.65)). Women with at least 1 male child are significantly more likely to use contraceptives ($p < 0.001$; aOR=1.64, CI (1.28 – 2.12)). Maternal age over 35 was not a significant predictor for modern contraceptive use. An adjusted linear regression shows that contraceptive use is significantly associated with a 9.7 (± 1.57) month increase in birth interval, holding maternal age and parity constant, ($p < 0.001$). Modern contraceptive use prior to pregnancy was not associated with a significant change in birth weight or gestational age in the child born of that pregnancy.

Interpretation It is encouraging that mothers seeking modern contraceptives rely on UNRWA to provide family planning services. We found that mothers with higher parity are more likely to use modern contraceptives, which fits with UNRWA recommendations. As expected, modern contraceptives lead to better birth spacing. However, mothers above 35 years of age are not more likely to use modern contraceptives. These mothers may be at higher risk for negative maternal and infant health outcomes. UNRWA family planning services could focus more on counseling this group of mothers.

Word count: 498

67. Impact evaluation of the Mother and Child Education Program (MOCEP) among children and families in Palestinian refugee camps in Beirut, Lebanon

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Abstract was submitted by Ghassan Issa on November 30, 2015 (arcgi@mawared.org)

Background: Children in Palestinian refugee camps are exposed to harsh environments characterized by poverty, overcrowding, unemployment, poor housing conditions, and barriers to accessing important services such as preschool and other school readiness programs. The

Mother and Child Education Program (MOCEP), a program for mothers of 4- to 6-year-old children without access to early child education, has been thoroughly evaluated for over two decades. Studies have repeatedly shown positive impacts on many dimensions of development. However, rigorous evaluations of MOCEP in refugee camps have not yet been conducted.

Methods: We are in the midst of conducting a randomized community-based trial of MOCEP among Palestinian refugees and marginalized communities in Beirut, Lebanon. The mothers have been randomly assigned to either MOCEP vs. a waitlist control condition. Before and after the 25-session group intervention trained raters, blind to the intervention are assessing a battery of validated measures focused on the child's socioemotional skills, executive functioning, and cognitive development. Assessment domains for maternal outcomes include maternal knowledge, attitudes and practices regarding early education and learning, discipline and limit-setting, child reading, perceptions of paternal engagement, and perceptions of community cohesion. In addition, we plan to code blindly mother-child interactions using videotaped observations. We have collected a set of demographic variables to control for parental characteristics, child characteristics, home and family environment, and community contexts. We plan to test possible mediating factors using a theory of change model. Finally, qualitative measures are being collected to: (1) gain a better understanding of the larger context within which the intervention is being implemented and evaluated and (2) characterize beneficiary perceptions and decision-making around program participation and enrollment. Fidelity ratings are also being conducted.

Findings: We have successfully completed pilot-testing of all the instruments and have completed enrollment of about 40 mother-child dyads at each of the two Palestinian refugee camps and are actively enrolling mother-child dyads in social service facility in Beirut. We will present preliminary results of our findings at the conference, including logistical and ethical challenges encountered during the implementation of the study in refugee camp settings.

Word count: 341

68. The impact of a family health team approach on the quality of healthcare for Palestine refugee infants in Jordan: A cross-sectional controlled study

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Abstract was submitted by Camille Vernooy on November 30, 2015 (C.VERNOOY@unrwa.org)

Background The UN Relief and Works Agency for Palestine Refugees in the Near East (UNRWA) provides primary healthcare to 3,5 million refugees, including 302,000 preschool children in Jordan, Lebanon, Syria, and the occupied Palestinian territories (West Bank and Gaza Strip). Recently, a Family Health Team Approach (FHTA) was implemented to increase the quality of healthcare by addressing the increased prevalence of non-communicable diseases. This increase demands a focus on comprehensive long-term care, as opposed to fragmented short-term care. A FHT is a multidisciplinary team composed of at least one physician, one nurse and a midwife. Each family is allocated to a FHT. This study assessed the impact of the FHTA on the quality of infant-healthcare as provided by UNRWA in Jordan.

Methods In May 2014 cross-sectional study was conducted in UNRWA clinics in Amman, Jordan comparing the quality of infant-healthcare between two clinics, one with FHTA and one without this approach, Taybeh and Nuzha respectively. Clinics were chosen for comparability in terms of socio-economic status of beneficiaries. Secondary data of infants aged 19–23 months, who registered at UNRWA clinics, was collected. Quality of care indicators were growth monitoring, anaemia screening, treatment and follow-up; immunization; acceptability-; continuity-; and timeliness of infant-healthcare. Data were collected through semi-structured interviews with parents (mothers) and review of health records. Ethical approval was obtained at UNRWA Ethics Office.

Findings The FHTA group comprised 437 infants and the control group 552. Compared to the control group, odds for attending all growth monitoring visits were higher in the FHTA group (87.9% vs. 74.3%; OR 2.8; 95% CI 1.90 – 4.34). No significant difference was observed in anaemia screening rates (FHTA: 93.8% vs. 95.1%; OR 0.75; 0.40 – 1.40). Odds for receiving iron to treat anaemia were 4.76 times higher in the FHTA group (86.7% vs. 76.7%; 1.28 – 17.7). Both follow up visits for anaemia (FHTA 67.7%; control 65.6%; OR 0.7; 0.29 – 1.69) and vaccination rates (FHTA: 92.9%; control: 92.6%; OR 1.20; 0.68 – 2.11) did not differ significantly between groups. Interviews (n=11) revealed waiting times at clinics to be perceived as a barrier for parents when seeking care for their infants. Acceptability and continuity of infant-healthcare were not perceived to be a barrier when seeking care.

Interpretation The FHTA thus has the potential to improve infant-healthcare in terms of growth monitoring and anaemia treatment. Growth monitoring and anaemia treatment were better provided in the FHTA clinic. Other quality indicators of infant-healthcare were similar to that of the control clinic. Further quantitative research is needed to understand the full impact of

the FHTA on infant-healthcare as data used in this study date back to when the FHTA was only implemented for three months.

Word count: 444

69. “Music and Resilience” (M&R): Clinical music therapy in mental health for Palestinian refugee children and adolescents.

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Abstract submitted by Liliane Younes on November 25, 2015(fgc.mental.health@gmail.com)

Background: The paper presents the first results of M&R, a pilot project running since 2012 responding to the NISCVT's search for effective additional treatments to complement its standard mental health program protecting the young Palestinian refugee population of Lebanon. Clinical music therapy (MT) is well established in Europe and USA within mental health care, developing evidence-based practice for a wide range of pathologies present in the Palestinian refugee community, including anxiety and depression disorders. In addition, practice in post-war and conflict zones has produced clinical results indicating that MT is effective in treating trauma and stress. The objectives of the project were to introduce clinical MT training and practice, to monitor direct effects on the children receiving treatment and indirect effects on the wider community.

Methods: Over M&R's first 3 years (2012-15), a clinical training strategy plan has been developed for the NISCVT local MT team, with periodic training periods, supervision, follow-up, and the constitution of a self-supporting 'Intervision' group which meets regularly each month. Some 200 children have been treated, individually or in groups, in NISCVT's 5 Family Guidance Clinics serving almost all the refugee camps in the country. Qualitative evidence has been collated through interviews, clinical observation and case studies. An approved and tested evaluation method, Individualized Music Therapy Assessment Profile, was introduced in 2013 and 25% of the children treated during the period January 2013-June 2014 were assessed by this method at the beginning and at the end of treatment.

Discussion: The context of 'M&R', namely a socially and politically deprived and marginalised community, together with the consequences of the escalation of the Syrian crisis within the host country Lebanon, have contributed to a high number of uncontrollable variables in the project, undermining operational stability and the constancy of qualitative and quantitative data collection. However, both types of data point consistently to positive results for children in MT treatment programs and improvements for their families and communities. The development of

the NISCVT MT team, through the training program has also shown very positive results, as observed in the Intervention reports.

Conclusions: MT appears to be effective in reducing stress symptoms in Palestinian refugee children and adolescents, stabilizing affect regulation and improving expression and communication abilities. More specific and clinically controlled research is necessary in this field, which would appear to offer an important additional resource for mental health care within the suffering Palestinian population, wherever it may be.

Word count: 401

70. Burden of chronic disease in the Palestinian healthcare sector using disability-adjusted life years, Palestine.

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Abstract submitted by Marwan Musleh on November 9, 2015 (marwanmoon@hotmail.com)

Background: Chronic diseases are considered the greatest public health concern globally, and contributor to a large burden of disease in developed world, and increasing rapidly in developing countries as well as Palestine. Where, Palestine is experiencing an epidemiological transition and a rapid increasing burden of chronic diseases as a consequence of rapid modifications in people behaviors. The Global Burden of Disease (GBD) project has made possible a new methodological approach and conceptual framework to estimate the burden of diseases and other health problems in populations everywhere nationally and globally.

Objective: We quantify the burden of most common chronic diseases assessed by their mortality, years of life lost due to premature mortality (YLLs), years of life lived with disability (YLDs), and disability – adjusted life years (DALYs) for 2010 in the Palestinian Territories (Gaza strip and the West bank).

Methodology: In this study we used the methodology specially designed for disease burden assessment developed by the World Health Organization (WHO) and their templates to calculate and quantify the burden of disease by estimating years of life lost due to premature mortality (YYLs), years lived with disability (YLD) and disability-adjusted life years (DALYs). The study used an available data from multiple sources including Ministry of Health (MOH) materials and annual reports 2010 and the Palestinian Central Bureau of Statistics (health survey 2010). The study was undertaken during the period from July - October 2015.

Results: In 2010, DALYs lost due to selected chronic diseases in the current study were estimated as (60/1000 DALYs) in the West Bank and (57/1000 DALYs) in Gaza Strip respectively, considering that each one DALY is thought of as one lost year of ideal healthy life. Ischemic heart disease (IHD) and hypertension contributed to the highest proportion of DALYs among males and females in 2010 in the West Bank and Gaza strip followed with cancer (lung cancer in males vs breast cancer in females) and then respiratory disease (COPD) with small difference in rank order. There also were sex and region differences. In terms of years life lost (YYLs) and mortality, Ischemic heart disease (IHD) also continued to rank highly as a cause of both YLLs and mortality, followed by cancer among populations in both the West Bank and Gaza strip for both sexes in 2010, indicating the major causes of chronic disease burden in Palestine in 2010.

Conclusion: Assessing DALYs in developing countries especially for protracted settings like Palestinian territories with political and socio-economic crises background, limited resources, unavailability of national health statistics network and scarce data on chronic diseases, represents a big challenge for the researchers and health policy-makers. However, this study tried to shed a light on a significant health problem in a problematic context and such study could be of great importance, as it provides a significant measures and basis to track the consequence of future interventions. Our study recommends that further studies using more recent data are important and needed. Additionally, our study findings indicate the need for basic intervention to tackle these burdens. The study also suggests devoting more attention into the necessity of establishing a national health statistics network, reporting all chronic diseases in the Palestinian healthcare sectors. In general, attention has to be increasingly paid to chronic non-communicable diseases (NCDs) in the Palestinian territories.

Word count: 543

71. Disease knowledge and beliefs about medicines among patients with type 2 diabetes mellitus

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Abstract submitted by Waleed Sweileh on November 28, 2015 (waleedsweileh@yahoo.com)

Background Diabetes mellitus (DM) is a common serious health problem. Medication adherence is a key determinant of therapeutic success in patients with diabetes mellitus. The purpose of this study was to assess medication adherence and its potential association with beliefs and diabetes – related knowledge in patients with type II DM.

Methods This study was carried out at Al-Makhfia governmental diabetes primary healthcare clinic in Nablus, Palestine. Main outcome of interest in the study was medication adherence. The Beliefs about Medicines Questionnaire (BMQ) was used to assess beliefs. Morisky Medication Adherence Scale (MMSA-8[©]) was used to assess medication adherence. The Michigan diabetes knowledge test (MDKT) was used to assess diabetes – related knowledge. Univariate and multivariate analysis were carried out using Statistical Package for Social Sciences (SPSS 20).

Results Four hundred and five patients were interviewed. The mean \pm SD age of the participants was 58.3 ± 10.4 (range = 28 – 90) years. More than half (53.3%) of the participants were females. Approximately 42.7% of the study sample were considered non-adherent (MMAS-8[©] score of < 6). Multivariate analysis showed that the following variables were significantly associated with non-adherence: disease-related knowledge, beliefs about necessity of anti-diabetic medications, concerns about adverse consequences of anti-diabetic medications and beliefs that medicines in general are essentially harmful. Diabetic patients with high knowledge score and those with strong beliefs in the necessity of their anti-diabetic medications were less likely to be non-adherent ([O.R = 0.87, 95% CI of 0.78 – 0.97] and [O.R = 0.93, 95% of 0.88 – 0.99] respectively). However, diabetic patients with high concerns about adverse consequences of anti-diabetic medications and those with high belief that all medicines are harmful were more likely to be non-adherent ([O.R = 1.09; 95% C.I of 1.04 – 1.16] and [O.R = 1.09, 95% C.I of 1.02 – 1.16] respectively).

Conclusions Beliefs and knowledge are important factors in understanding variations in medication adherence among diabetic patients. The BMQ can be used as a tool to identify people at higher risk of non-adherence. Improving knowledge of patients about their illness might positively influence their medication adherence.

Word count: 326

72. Factors associated with quality of life among hemodialysis patients in the Gaza Strip using SF-36 questionnaire

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Abstract was submitted by Hammouda Abu Oda on November 30, 2015 (hamm_oda@hotmail.com)

Background: Quality of life (QoL) has emerged as a distinctive, consistent, and strong parameter for assessing and measuring the quality of health-care for patients with renal disease. Patients with end-stage renal disease (ESRD) face physical, psychological and social problems that trigger reduced QoL. The QoL of hemodialysis patients in the Gaza Strip (GS) has not been studied previously. The aim here was to assess QoL and its determinants among hemodialysis patients in the GS, using the Short-Form-36 (SF-36) questionnaire.

Methods: Descriptive, analytical, cross-sectional study has been performed on 100 patients aged 18 years or more on follow-up at two hemodialysis centers; Al-Najjar Hospital and Nasser Hospital, in 2014. A convenience sample of all prevalent hemodialysis patients was recruited. Patients with neurological problems and severe comorbidities were excluded. After the participants' socioeconomics, demographics and disease characteristics had been recorded, they filled out the Short Form-36 questionnaire and the relationship between various variables and the quality of life score was evaluated.

Findings: Seventy-one patients (64.5%) were men, 75 (68.2%) were married, 74 (67.3%) were older than 41 years, and 85 (77.3%) were on dialysis for more than 1 year. The overall QoL for hemodialysis patients was rated low (49.5 ± 13.7) when self-assessed using the SF-36. What is more, the QoL scores were 53.1 ± 32.0 for social functioning, 51.78 ± 29.31 for physical functioning, 50.5 ± 14.8 for mental health, and 45.9 ± 12.2 for the general health. Additionally, the older patients had statistically significantly reduced QoL and female patients had better QoL scores. The QoL scores revealed a decreasing trend with decreasing level of education; they were elevated among employed patients. Moreover, the QoL scores revealed a decreasing trend with presence of chronic diseases history; they were elevated among patients attending units more than three sessions.

Conclusion: We sum up; QoL is reduced in all the health domains of HD patients. Older age, male gender, unemployment, and duration of dialysis adversely affected the QoL scores. Enough management of some of these factors could influence patient outcomes.

Word count: 336

73. Risk factors for pediatric cancer In the Gaza Strip: Case-control study

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Background: Cancer is a serious problem that known to be the third leading death in Palestine especially in children. Children until 18 years old developed pediatric cancer without causes. The aim of this study is to identify the main risk factors for pediatric cancer among children in Gaza Governorates.

Methods: A case control study conducted from five Gaza strip governorates and consisted of 292 child divided in two groups (146 cases who had pediatric cancer and 146 controls had not) Controls and cases are matched by age, sex and residency. The cases distributed on Gaza Governorates. The cases were solid tumor in 70 case (47.9%), hematology tumor 50 cases (35%) and lymphoma tumor had 25 cases (17.1%).

Finding: The results of the study showed that risk factors associated with pediatric cancer were as follows: child education level (P value = 0.044), child father age (P value = 0.029), medication giving during gestational period, exposure to Ultrasound during gestational period (P value = 0.000), family cancer history and degree to relevant to child (P value = 0.000), daily beverage intake (P value = 0.019) and additives in drinking (P value = 0.000)), also, there was association between family history of smoking (P value = 0.016) and pregnant exposed to passive smoking as P value = 0.018, pregnant exposed to aerosol (P value = 0.011), child exposed to paints and aerosol (P value = 0.001), child exposed to white phosphorus (P value = 0.000), electromagnetic field (P value = 0.007) and industrial type such as (Welding cars, Plastic factors, Block and cement) (P value = 0.036) while the study found child age, birth weight, child with chronic diseases, child occupation and sport practice, child exposed to (passive smoking, X ray, hairspray and varnish, agriculture pesticides and herbicides) were not association for pediatric cancer. Also, parents education level and occupation, mother age, mother exposed to X ray, white phosphorus and explosive material were not relevant for pediatric cancer. Likewise, residency, live status, additives in food and Petroleum station in the same region were not associated with pediatric cancer.

Interpretation: The main of the risk factors appeared are avoidable and can be prevented.

Key words: pediatric cancer, risk factors, Gaza Strip, environment factors, hematology, solid tumor, lymphoma.

Word Count: 360

74. Depression and quality of life of youth with juvenile diabetes mellitus attending UNRWA clinics in West Bank

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Abstract was submitted by Loay Fawadleh on November 30, 2015

Background: Juvenile diabetes mellitus is one of the major chronic diseases which affects millions of people worldwide. There is an increase in the incidence of childhood type 1 diabetes mellitus which makes this disorder a major public health problem.

Aim: To assess depression and quality of life among youth with Juvenile diabetes (T1DM) aged 15-24 years who attended 20 UNRWA clinics in West Bank.

Method: A cross-sectional design was utilized to achieve this purpose. The data was gathered between the first of September, 2013 and finished at the end of October, 2013. Data was collected by using self reported questionnaire including 141 patients attending the UNRWA primary healthcare centers in West Bank. The self-reported questionnaire consisted of socio-demographic data sheet, Beck Depression Inventory Scale (BDI) and Quality of Life (QOL) and they included 57 items. Statistical analysis was performed using the statistical package for social sciences (SPSS), version 18.0 and were analyzed by the using parametric test such as frequency, T-test, ANOVAs test and Pearson's test.

Findings: Analysis of the patients' characteristics showed that the participants' age ranged from 15 to 24 years old of which 38.3% were less than 18 years old, 51.8% were males and 48.2% were females. The majority of the participants (42.6%) lived in villages, 87.2% were single, 35.5% had elementary education and 36.2% had family income from 1,000 NIS to less than 2,000 NIS monthly.

For the medical history, 73.8% who were having diabetes mellitus for more than 3 years, 31.8% of the participants suffered from diabetes complications such as eye complications and 31.2% of the participants had psychological problems.

The current study showed that the overall QOL for diabetic patients was (65.5%) and (47.5%) of them rated their quality of life as good and very good. They were satisfied with the social domain more than other domains and they were least satisfied with the physical domain. In addition, the current study showed that 41.1% of the participants suffered from the presence of depressive symptoms.

Further, the findings showed that independent variables including gender, age, place of residency, marital status, educational level and psychological problems had significant effects on quality of life of the diabetes mellitus type 1 patients. In addition, the findings showed that gender, age, place of residency, marital status, educational level, diabetes complications and psychological problems had significant effects on depression among youth with diabetes mellitus type 1.

Furthermore, the Pearson's test revealed a strong inversed statistically significant relationship between quality of life and depression. The strongest relationship between QOL and depression was for the psychological domain and the weakest relationship was for the social domain.

Conclusion: The study found that diabetes mellitus type 1 affected negatively quality of life of youth with juvenile diabetes mellitus type 1 and its four domains (physical, psychological, environment and social) and these patients had a high level of depressive symptoms.

Word count: 475

75. Evaluation of campaigns for Palestine refugees with diabetes mellitus attending UNRWA health centers

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Abstract was submitted by Camille Vernooy on November 30, 2015 (C.VERNOOY@unrwa.org)

Background United Nations Relief and Works Agency for Palestine Refugees in the Near East (UNRWA) is the main healthcare provider for Palestine refugees in Jordan, Lebanon, Syria, the West Bank and Gaza Strip. Among the UNRWA population the prevalence of Diabetes Mellitus type II (DMII) is 11%. During UNRWA’s clinical audit in 2012, it was revealed that over 90% of DM patients are overweight or obese, with the majority (64%) being obese. In response to those results, in 2013 UNRWA conducted DM campaigns to improve the capacity of health staff for better diabetes care management, and to promote diabetes care among DM patients, through conducting variety of group sessions.

Methodology In 2013, an interventional descriptive study, which we called campaign in the HCs, was conducted in 30 UNRWA health centers (HCs) in Jordan, West Bank, Lebanon and Gaza, and was repeated with the same methodology in 2014 to include more HCs. Pre-campaign preparation steps were taken: advance diabetes management training for UNWRA health staff, partnership establishment with local NGOs and educational materials prepared, in 2013, 1300 with DMI or DMII for ≥ 1 year, and who were willing to participate, were randomly selected from 30 HCs in the four fields. The same was done for 2014 but with 1600 patients and 32 HCs, HCs have included the three interventional aspects of diabetes care, by conducting educational sessions on diabetes management, healthy cooking sessions and exercise sessions in UNRWA schools. Coded data on weight, waist circumference (WC), 2-hours postprandial glucose (2hrPPG), blood pressure and patient session’s attendance, were collected at baseline,

and on a monthly basis for 6 months in each year, except for cholesterol were collected pre-post campaign. Pre-post Questionnaires on DM knowledge and practice were filled.

Findings In 2013, 1174 (951 females, 223 males) completed the campaign, with an average of 83.7% attendance of sessions; patients were diagnosed with DMII (36.1%), DMII & ypertension (59.3%), or DMI (4.6%). Of all patients, 17% lost $\geq 5\%$ of their weight, 19% lost 3%-5%, and 29% lost 1%-3%. Reduction was seen in patients with high-risk waist circumference (WC), (114.3 \pm 8.6cm to 111.9 \pm 8.7cm for men WC \geq 102cm and 110.2 \pm 11.2cm to 107.4 \pm 11.7cm for women WC \geq 88). Improvements were seen in 2hrs-PPG and cholesterol levels (-7.2 \pm 40.3 mg/dl and -32.1 \pm 83 mg/dl respectively). 2014 results will be ready in December 2014.

Interpretation The results of such a campaign indicate that using an existing NCD care program embedded in UNRWA primary HCs is a feasible way to implement combined diabetes care management and weight loss. The adaptation of variety of focus group sessions (educational, cooking and exercise), with local NGOs and community partnership, have shown to a positive result in reducing weight, WC, 2hrPPGT, Cholesterol and BP. Using existing NCD care resources in primary HCs to provide DM care would be more efficient in terms of time, cost and counseling. Therefore, such campaigns need to be sustained and expanded to other HCs, also reflected on the NCDs way forward UNRWA policy.

Word count: 489

76. Quality of life in patients with end-stage renal Disease on hemodialysis: A cross-sectional study from Palestine

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Abstract submitted by Saed Zyoud on November 28, 2015 (saedzyoud@yahoo.com, saedzyoud@najah.edu)

Background: Haemodialysis (HD) is a life-saving but burdensome therapy for patients with end-stage renal disease (ESRD) which can bring about significant impairment in health-related quality of life (HRQOL) and outcomes. We therefore sought to determine the patterns of HRQOL and to identify the risk factors for poorer HRQOL in Palestinian patients with HD.

Methods: A cross-sectional study was performed during June 2014 to January 2015, using the EuroQOL-5 Dimensions instrument (EQ-5D-5L) for the assessment of HRQOL. ESRD patients undergoing HD at inpatient hospitals from ten different settings at a national level from Palestine were approached for this study. Multiple linear regression was used to estimate which variables were significantly associated with poor HRQOL. The significance level was predetermined at $p < 0.05$ for all tests. Data variables were analysed using SPSS (SPSS Inc., Chicago, IL, USA) programme version 15.

Findings: Out of 277 patients, 267 patients consented to participate (response rate of 96 % of all eligible patients approached). Overall, 139 (52.1%) were male, and the mean (standard deviation) age was 53.3 (16.2) years. 177 patients (66.3%) were on HD for less than four years. The reported HRQOL as measured by mean EQ-5D-5L index value and Euro QOL visual analogue (EQ-VAS) score was 0.37 ± 0.44 and 59.38 ± 45.39 , respectively. There was a moderate positive correlation between the EQ-VAS and the EQ-5D-5L index value ($r = 0.44$, $p < 0.001$). There were significant differences between participant groups according to age, body mass index, education level, residency and total number of co-morbid diseases (Kruskal Wallis tests, p -value < 0.05), as well as gender, occupation, and total number of chronic medications (Mann-Whitney test, p -value < 0.05). The results of a multiple linear regression showed a significant association between HRQoL and age, gender, education level, number of chronic medications, and number of co-morbid diseases ($p < 0.05$).

Interpretation: Our results provide insight into a number of associations between patient variables such as demographics, clinical factors, and their HRQOL. Elderly patients, female gender, obese patients, illiterate patients, living in Palestinian refugee camps, and being unemployed were all associated with poor HRQOL. In addition, this study found that HRQOL worsened as the total number of chronic diseases, and the total number of HD medications increased. More directly, the results of this study should help to raise health care providers' awareness mainly for HD patients with co-morbid diseases and patients with advanced age to improve their quality of life.

Word count: 403

77. Prevalence of non-communicable diseases (NCDs) risk factors among Palestine refugees in Lebanon

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Abstract was submitted by Camille Vernoooy on November 30, 2015 (C.VERNOOY@unrwa.org)

Background UNRWA is currently facing the massive burden of NCD among Palestine refugees. A global strategy to curb the burden chronic conditions (the “25x25 campaign”) has been recently adopted. The strategy encompasses activities to reduce the impact of NCDs risk factors. Therefore, valid estimates on the prevalence of NCDs risk factors are a crucial asset to design effective preventative policies. This study aims at assessing the prevalence of risk factors for hypertension (HTN) and diabetes mellitus (DM) in Palestine refugees in Lebanon (PRL), including those Palestine Refugees from Syria (PRS).

Methodology A descriptive study was conducted in 8 UNRWA health centers (El-Buss, Burj-Shemali, Ein-Helwi I, Beirut Policlinic, Shatila, Mina, Wavel and Bar-Elias) in Lebanon during the timeframe August 2014 - January 2015)

A random sample of 5,025 PRL and 799 PRS was selected from the population aged 40 and above under the catchment area of the 8 health centers and included in the study. Direct measurement of height and weight was performed to measure the Body Mass Index. A questionnaire investigating smoking habits, personal history of cardio-vascular diseases (CVDs) and family history of diabetes mellitus (DM), hypertension (HTN), or CVDs was administered to included patients and used for data collection. The SPSS software was used to process and analyze the information.

Results Gender was equally distributed in PRS whereas in PRL females accounted for 58% of the sample. Among PRL, the majority of patients were either overweight (38%) or obese (30%). Obesity affected 35% and 25% of females and males, respectively. Conversely, smoking rate among males was 58% versus 42% among females. The prevalence of family history of DM, HTN or CVD was 62% while only 2% had personal history of CVD. Some 37.9% of the interviewed PRL reported one risk factor, 37.8% two risk factors, and 10% three risk factors for DM Type 2 and/or HTN. Similarly, 39% and 34% of PRS were overweight or obese, respectively. Obesity prevalence among females was 46.7% versus 21.8% in males. The majority of screened PRS males (67%) were smokers whereas smoking prevalence among females was 34%. Some 57% of the PRS had family history of DM, HTN or CVD whereas 4% stated that they had personal history of CVD. Some 39% of the interviewed PRS reported one risk factor, 35% two risk factors, and 11% three risk factors for DM Type 2 and/or HTN.

Conclusions Risk factors for NCDs were widespread across both PRL and PRS, aged 40 and above. Obesity and overweight were prevalent in both groups, particularly among PRS women. Smoking habits were widely reported, mainly among PRS males. More than two third of the overall sample was affected by one or two risk factors. In Lebanon, previous evidence from UNRWA highlighted poor awareness of patients on NCDs primary prevention strategies. Recently, a diabetes campaign was conducted by UNRWA and re-affirmed the Agency's willingness to boost community-oriented initiatives. However, more pledges are needed to systematically strengthen primary prevention of NCDs at community level.

Word count: 493

78. Health-related quality of life among breast cancer patients from Palestine: An assessment with EuroQoL-5 Dimensions Scale

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Abstract submitted by Samah Al Jabi on November 17, 2015 samahjabi@najah.edu, samahjabi@yahoo.com

Background: The rise in the incidence rates of breast cancer among Palestinian women and the negative impact of cancer on survivors necessitate the importance of increased knowledge about patients health related quality of life (HRQoL). The purposes of this study were to assess the HRQoL among breast cancer women, and to examine the impact of socio-demographic characteristics, breast cancer clinical characteristics and treatment options on HRQoL using EuroQol-5 Dimension (EuroQoL EQ-5D) scale.

Methods: It is a cross-sectional study using a convenient sampling method that was conducted in four oncology centers in West-Bank, Palestine over 6 month period in 2014. The EuroQoL EQ-5D scale was used to assess patients' HRQoL. Descriptive statistics were used to describe socio-demographic and disease related clinical characteristics of the patients. Non-parametric tests (Kruskal Wallis and Mann Whitney tests) were used when appropriate to investigate significant effects of various characteristics on HRQoL. All analysis were performed using SPSS version 16.0.

Findings: A total of 244 breast cancer women were interviewed. The mean age (\pm SD) of all respondents was (52.7 \pm 12.2) years. HRQoL was good, the median EQ-5D index was 0.72 (interquartile range (IQR): 0.51-0.84) and the median of EQ-visual analog scale (EQ-VAS) was 70 (IQR: 55-80). There was a significantly strong positive correlation ($R = 0.51$; $p < 0.001$) between the EQ-5D index values and the reported EQ-VAS scores. Older patients ($p = 0.006$), employed females ($p = 0.002$), women with higher income ($p = 0.012$), women with higher education ($p = 0.001$), women who practice worship ($p = 0.006$), and women who exercise regularly ($p = 0.006$) have significant higher EQ-5D index score. In addition, it has been shown that as the stage of breast cancer increased the median of EQ-5D index value decreased significantly ($p = 0.002$). On the other hand, regarding VAS scores, it has been found that employed females ($p = 0.006$), women with higher income ($p < 0.001$), women with higher education ($p < 0.001$), and women who exercise regularly ($p = 0.002$) have significant higher VAS score. In addition, it has been shown that as the stage of breast cancer increased the median of EQ-5D index value decreased significantly ($p = 0.004$). Furthermore, patients who underwent breast conservation therapy had a higher median VAS than those with other types of surgery ($p = 0.004$).

Conclusion: Palestinian breast cancer survivors reported favorable overall HRQoL. Higher educational attainments, higher family monthly income, highly spiritual thoughts and believes, high physical activity and exercising have been highly significantly associated with better overall HRQoL. Thus, improve overall HRQoL should be considered a very important goal in treatment of breast cancer.

Word count: 436

79. Outcomes of the management of acute meningococcal septicaemia in Al-Nasser Paediatric Hospital, Gaza, Palestine: A retrospective cohort study

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Abstract submitted by Nabil Barqouni on November 20, 2015 (nbarqouni@gmail.com)

Background: Infection with *Neisseria meningitidis* can produce a variety of clinical manifestations, ranging from transient fever and bacteraemia to fulminant disease with death ensuing within hours of the onset of clinical symptoms. Mortality and long-term morbidity can be very high in patients with invasive meningococcal disease if the infection is not treated appropriately. Our main objective was to evaluate case fatality rate of all children admitted with acute meningococcal septicaemia.

Methods: We conducted a retrospective cohort study of all paediatric cases of acute meningococcal septicaemia admitted to Al-Nasser Paediatric Hospital, the largest paediatric hospital in Gaza Strip: included >75% of paediatrics intensive care beds in Gaza strips, between January 2009 and September 2015. Acute meningococcal septicaemia was diagnosed and confirmed based on the clinical presentation, skin smear and blood culture. Socio-demographic, clinical and outcome information were obtained from hospitals records. Outcome measures were predicted mortality using Paediatric Risk of Mortality score III (PRISM III), actual mortality and standardised mortality ratio. Predictors for case fatality were analysed by univariate and multivariable analyses.

Results: A total of 240 children were admitted with proven acute meningococcal septicaemia:113 of them (47%) were male with mean age of 3.15 ± 2.6 years. The number of admitted children with meningococemia decreased from as high as 47-59 cases/year in the 2009-2011 period to 21-22 cases/year in the 2012-2015 period of time. The total mortality predicted by PRISM III was 25.56%. There was an actual overall mortality of 49 children (20.8%). With standardised mortality ration of 0.814. Forty-one children (82%) were died within the first 24 hours of admission. Sixty-nine(28.8%) children received corticosteroid, 85(35.4%) received inotropic medications and 46(19.2%) required mechanical ventilation for a median of 24 hours. In 75(31.3%) children meningococcal septicaemia was associated with meningitis. The most common complications were multi-organ failure (n=22, 9.2%), skin necrosis/scarring (n=13, 5.4%) and convulsions/seizures (n=13, 5.4%), and disseminated intravascular coagulopathy (n=10, 4.2%). Mortality was independently associated with age (OR= 1.06[1.03-1.10] per 1-year decreased age; P=.0006), shock (OR= 3.83[1.32-11.7]; P=.015), absence of meningitis on presentation (OR= 9.55[3.25-28.07]; P = .0013), and admission to the intensive care unit±mechanical ventilation (OR=9.85[4.31-22.54]; P<.0001).

Interpretation: The mortality rate of the disease still high, however, this can be explained by the high predicted score of mortality, which reflect the severity of admitted cases. Outcomes following meningococcal septicaemia remain poor especially in younger age group. This highlights the importance of early identification of meningococcal patients in primary care as well as in emergency departments. This study provides prognostic information suitable for our local context.

Word count: 412

80. Epidemiology of meningococcal disease in Gaza governorates, occupied Palestinian territory, ten years follow up 2005-2014.

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Abstract submitted by Nedal Ghuneim on November 25, 2015 (ghuneimnedal@yahoo.com)

Background: Meningococcal disease is a serious life-threatening infection with a high case-fatality rate especially in infants. In Gaza Strip, Meningococcal disease remain one of the most challenging communicable diseases.

Methods: Cross-sectional study carried out involving all confirmed reported cases of meningococcal disease in all Gaza governorates from 1st January 2005 to 31st December 2014. Data were analyzed using SPSS version 13.

Findings: A total of 1134 cases of meningococcal diseases were diagnosed in Gaza Strip during the last 10 years. The incidence rate per 100.000 population ranged from 3.9 in 2014 to 10.1 in 2008. The mean annual incidence was 7.6 per 100.000 population. A reliable decreased trend was reported for the morbidity indicator since 2008 where the incidence was decreased from 10.1 per 100.000 population to 3.9 per 100.000 population in 2014. The mean 10 years reported incidence by governorates was 11.44/100000 in North, 8.71/100000 in Gaza, 6.75/100000 in Mid-Zone, 3.68/100000 in Khan-Younes and 5.51/100000 in Rafah.

There was a male predominance (56.1%) than female. Age distribution showed that it occurred mainly among children five years or less where 75% of cases were reported. Analysis of the clinical course of the meningococcal infection revealed significant prevalence of meningococemia (62.4%) than meningococcal meningitis. About half of the cases (48.6%) were diagnosed by skin smear, followed by 20.1% by CSF gram stain, 19.1% by CSF culture. Only 6.1% of cases were diagnosed by blood culture. Serogrouping was done for 127 cases (11.2%) and showed only serogroup B. According to our data, no seasonal pattern was observed.

Case-fatality rate (CFR) varied from 24.8% in 2010 to 10.3% in 2014 with an overall CFR of 16%. The majority of deaths (96.7%) were among meningococcal septicemia with CFR of 32.8%. Results show that the majority of deaths (71.4%) were among male.

During this period, the majority of reported deaths were in North governorate (41.4%) followed by Gaza governorate (30.4%). The lowest reported rate was in Khan-Younes governorate (6%).

Interpretation: Gaza strip is still highly endemic with meningococcal disease with a high CFR compared to that reported in other parts of the world possess a challenge for continuous monitoring and reporting of meningococcal disease. The high prevalence of meningococemia explains the high CFR. The development of an effective new Meningococcal Group B vaccine against *N. meningitidis* group B represented an enormous progress in the possibility of controlling meningococcal disease caused by serogroups B. There is rationale for use of this vaccine to all infants through the expanded program of immunization.

Word count: 415

81. The impact of continuity of care and socio-behavioral factors on antibiotics prescription for upper respiratory tract infections in Palestine refugee children in UNRWA health centers

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Abstract was submitted by Camille Vernoooy on November 30, 2015 (C.VERNOOY@unrwa.org)

Background Antimicrobial resistance (AMR) is a growing public health threat worldwide, including the Middle East, especially in vulnerable populations like refugees. Over-prescription of antibiotics for upper respiratory tract infections (URTI) in children is very common, contributes to AMR, but also represents opportunities to tackle it. UNRWA is gradually implementing a Family Health Team (FHT) model at their health centers. FHTs provide person and family -centered care, with medical officers providing continuity of care. This study tried to assesses the differences in knowledge and beliefs about antibiotics between medical officers working in UNRWA health centers with the FHT-model and those without, and as well as the association between relevant socio-behavioral factors and high antibiotic prescription in URTI in children in FHT and non-FHT settings.

Methodology A cross-sectional study was conducted among medical officers working at UNRWA health centers. Determinants and outcome were assessed using a self-administered standardized multiple choice questionnaire, i.e. demographics, beliefs and knowledge about antibiotics, including 5 clinical case vignets about antibiotics prescription and factors influencing the decision to prescribe antibiotics for URTI, respectively. Out of 362 medical officers working at UNRWA health centers in Jordan, Gaza, West Bank and Lebanon, 335 (92,5%) responded to the survey. Differences in demographics, beliefs and knowledge between the FHT and non-FHT group were analyzed with the chi-square test. A p-value

<0,05 was considered significant. Determinants associated with high antibiotic prescription were analyzed using binary logistic regression. A self-reported antibiotics prescription rate >25% for URTI was considered high-prescription.

Results The FHT-group comprised 227 medical officers, the non-FHT-group 108. Demographics, including self- reported antibiotic prescription rates for URTI in children and

trainings on antibiotics, were similar for both groups. Medical officers operating under the FHT scheme had a stronger belief that AMR is a problem in the community ($p=0,048$), and implement current “Centers for Disease Control and Prevention” (CDC) URTI-guidelines more correctly in clinical case 1 ($p=0,001$). None of the demographic determinants were significantly associated with high-prescription. For the socio-behavioral factors, in the non-FHT-group, previous clinical experience (odds ratio (OR) 0,14; 95% confidence interval (CI) 0,03-0,74) and education level of the patients’ parents (OR 11,6; CI 2,33-58,10) were associated with high-prescription. In the FHT-group being on the safe side (OR 2,49; CI 1,07-5,79) was associated with high-prescription.

Interpretation The FHT-group has a better knowledge of antibiotics use and AMR as a problem in the community, despite not receiving more trainings on the matter. The determinants associated with high antibiotic prescription differ between the FHT and non-FHT groups. To assess whether prescription behavior is modifiable and, together with knowledge of antibiotics and AMR, influenced by the working environment of the physician, further research is needed.

Word count: 440

82. Knowledge and adherence to medications among Palestinian geriatrics living with chronic diseases in the West Bank and East Jerusalem

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Abstract submitted by Salam Abu Sharar on November 15, 2015 (saharjhassan@gmail.com)

Background: Adequate patient knowledge about medications is essential for appropriate drug taking behavior and patient adherence. This study aims to assess and quantify the level of knowledge and adherence to medications among Palestinian geriatrics living with chronic diseases and to investigate possible associated socio-demographic characteristics.

Methods and Findings: We conducted a cross-sectional study during June 2013 and January 2014 among Palestinian geriatrics ≥ 60 years old living with chronic disease in the West Bank and East Jerusalem. A stratified random sample was selected and a questionnaire-assisted interview was applied for data collection. T-test was applied for bivariate analyzing and one-way ANOVA test was applied for multivariate analyses.

Results: A total of 1192 Palestinian geriatrics were studied. The average age was 70.3 (SD=8.58) years and ranged from 60-110 years. The sample comprised 659 (55.3%) females and 533 (44.7%) males. The global knowledge and global adherence scores were (67.57%) and

(89.29%), respectively. Adequate levels of knowledge were 71.4%, and of adherence 75%, which were recorded for 705 (59.1%) and 1088 (91.3%) participants, respectively. Significant higher levels of global knowledge and global adherence were recorded for males, and for participants who hold a Bachelor's degree, those who live on their own, and did physical activity for more than 40 hours/week (p-value <0.05). Furthermore, workers, participants with a higher monthly income, and non-smokers have a higher knowledge level with (p-value <0.05). We found positive correlation between participants' global adherence and global knowledge ($r=0.487$ and p-value <0.001). Negative correlation was found between participants' global knowledge and adherence with age ($r= -0.236$, p-value <0.001 and $r= -0.211$ and p-value <0.001, respectively. Negative correlation between global knowledge and the number of drugs taken ($r= -0.130$, p-value <0.001) was predicted.

Conclusion: We concluded that patients with a higher level of knowledge are more adherent to their medications and that better understanding of socio-demographic factors has a clear influence on the level of knowledge and adherence to medications and thus contributes to the development of guidelines for treatment and may consequently lead to favourable clinical outcomes and savings of health care costs.

Word count: 342

83. Pharmacists' knowledge, attitudes and practices towards herbal remedies in West Bank, Palestine

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Abstract submitted by Maher Khmour on November 29, 2015 (mkhdour@pharm.alquds.edu or maher.khdour@gmail.com)

Background: There is an increasing trend towards consumption of complementary and alternative herbal products in many parts of the world.

Objectives: The purpose of this study was to investigate the knowledge and attitudes among pharmacists in West Bank, Palestine towards the use of herbs.

Methods *Study design, settings and study subjects*

This is a cross-sectional study that was conducted in four of the largest cities in Palestine; Ramallah, Hebron, Bethlehem and Nablus. The study commenced in December 2014 and

continued for 3 months. A total of 350 pharmacists were included in the study based on their geographical distribution (i.e north, middle, and north), with a response rate of 82.9%. Pharmacists from all specialties working in hospitals, independent and chain pharmacies were enrolled in the study after obtaining an informed consent.

Questionnaire The content of the questionnaire was reviewed by four research experts for face validity, and it was piloted with 12 pharmacists in order to judge the time needed for administration and to test for clarity and logical flow. There were two sections. The first section requested details of the participant's demographic information, such as age, gender, In the second section, the questionnaire included open-ended and closed questions about the participant's behaviors towards and knowledge about use of herbal remedies.

Results The mean age of the pharmacists was 32.9 (SD=6.5) years. The majority of the pharmacist 238 (68%) worked in the community pharmacies and their experience in practice ranged from 1 to 26 years. Product package instructions and product representative were the most consulted by the pharmacists (154; 44% and 89; 25.4% respectively). General health tonic preparations were the most widely dispensed drugs, followed by cough preparations (19%) and slimming agents (22%). The Majority of pharmacists (227; 64.9%) believed herbal remedies were effective; however, fifty percent of the pharmacists had concern about their safety. The knowledge of respondents about the indications of herbal medicine was good, but their awareness of interactions, contraindications and adverse effects was inadequate. The majority of Pharmacists (308; 88%) believed that herbal product should undergo increased regulation and (262; 74.9%) believed that information available about herbal and natural product isn't adequate.

Conclusion: Many pharmacists in Palestine believed that herbal remedies were an effective alternative therapeutic option. Continuing education programs, for practicing pharmacists, in herbal medicine should be encouraged. This would enable pharmacists to provide competent, effective and holistic patient care.

Word count: 394

84. Assessing Paracetamol misuse among parents of children less than 6 years old in Ramallah district

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Abstract submitted by Rola Sabri on November 30, 2015 (rolasabri97@gmail.com)

Background Fever is a natural immune response to pathogens. Paracetamol (acetaminophen) is an analgesic and antipyretic drug that is widely used at home for children before being presented at a health care center. Majority of people think it is a very safe drug, but it is not clear if parents in Palestine are aware of its toxic side effects on liver if not used properly, giving that relatively

large number of children attend hospitals each year in the developed countries due to liver toxicity caused by Paracetamol overdose which is difficult to diagnose. This study aims to assess Paracetamol misuse among parents of children 6 years old and less in Ramallah district.

Methodology Cross sectional survey with a systematic random sample of 382 parents of children 6 years old and less. Response rate was (98.6%).The study was conducted through the month of October 2015, and included 377 parents at pediatric out patient clinics at several hospitals, Maternity and child health centers as well as 2 day care centers In Ramallah district. Data was collected using a questionnaire and interviews with parents. It consisted of questions concerning parents' knowledge about fever and its management, their fears, frequency of self-medication, education, knowledge and awareness about Paracetamol toxic effects, extent of family interference, the dose and frequency of administration compared to child's weight. Higher-than-recommended dose was defined as $>16.5\text{mg/kg}$. Data analyzed with SPSS version 20 and logistic regression was used to ascertain factors associated with Paracetamol misuse.

Findings Half of the participants,50.1% of 377 have Paracetamol misuse,49.9% were not misusers but most of them give lower doses than recommended. 79% of parents were older than 26 years,80.9% have bachelor degrees or more,80.4% live in a city,82% thought fever is harmful,70.3% not aware of fever beneficial effects, 38.5% are in panic when their child has fever,61.5% decided on their own to administer paracetamol to their children without Doctor's consultation,45.9% don't seek doctor's advice so often for their febrile child,57.3% didn't receive a proper counseling from Doctors or pharmacists to adjust the dose when given together with cold medicines,45.9% thought it is very safe, and 63.4% were not aware of its toxic effects on liver. Paracetamol misuse was associated with lack of awareness of Paracetamol toxic effects on liver (odd ratio:0.608,p-value: 0.027).Living in urban areas was significantly associated with lower Paracetamol misuse (OR:0.566,p-value:0.04). Unexpectedly, using thermometer was significantly associated with decreasing Paracetamol misuse practices (OR:0.377,p-value :0.003). None of the following "giving Paracetamol after Doctor's consultation, the child's age, and parents' education" was significantly associated with Paracetamol misuse.

Interpretation Paracetamol misuse was high among parents. Parents' knowledge regarding its toxicity on liver was poor, people living in urban areas and those using thermometer in measuring temperature had significantly lower misuse. So it is proposed to do further researches that cover rural areas and camps, and to investigate the prevalence of liver toxicity due to paracetamol overdose. With the help of MOH and pharmaceutical association, a risk management plan can be issued.

Word count: 496

85. Medication errors in NICUs in Palestine: Nurses' perception

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Abstract submitted by Ruba Najjar on November 30, 2015 (rubaodeh@yahoo.co.uk)

Background and Objectives: Neonatal intensive care unit (NICU) is the patient group with the highest error and potential adverse drug effects (ADE) rate with 74% of errors and 79% of potential ADEs occur in *treatment ordering* phase.

This first of its kind study in Palestine was prepared to identify the prevalence of near misses and medication errors (ME) in NICU in Palestine over a period of 12 months looking at perception of ME from NICU nurses' point of view in order to enhance NICU services, implement strategies that can be applied in Palestinian NICUs to decrease mortality rate amongst neonates and to assess the expected impact of training and combined risk management/clinical pharmacist led education programme on these errors. The study design is quantitative (descriptive-case study) and sample is non-random convenience sample.

Target population: nurses working in NICUs in governmental and private Palestinian hospitals. 150 nurses completed the questionnaire regarding medication errors in NICUs, factors leading to errors and methods for prevention of such errors. **Results** revealed that nurses received inadequate training to fulfill their duties with nearly 50% of nurses not received any training or specialized training before working in NICU, and only 30% of participants attended training workshops during the last 12 months. Regarding factors contributing to ME; lack of pharmacy supervision was on top of the list (79.1%) and (77.3%) due to absence of protocols or standard operating procedures. In term of factors preventing from reporting errors; (74%) blamed management and anonymity while (66%) did not know what constitutes a medication error. 62% admitted a near miss being during preparation phase (24%) followed by wrong patient (22.7%). In terms of ME (26%) admitted ME which was actually administered to a patient over last 12 months as dose/calculation error (18.7%), and route of administration error (12.7) with only 22% said they reported the incident and filed it in patient's record. About 60% did not fill any form of *incident report* as no protocol exists for such cases. Most of the nurses agreed that the points suggested by the researchers contributed to ME with inadequate training at top of the list (79.5%) followed by lack of pharmacy supervision second (79.1%) while prescribing using medicines trade names rather than generic name came last (72%).

Conclusions: Medication errors are common in NICUs. Fortunately, actual harm to an infant is rare. Interventions to reduce errors, particularly within the context of a risk management programme, are needed and include but not limited to improved communication amongst physicians, nurses, and pharmacists mainly clinical pharmacists. Mandatory Continuous education/training is THE tool to improve NICU nurses' performance and prevent ME. Reliable references to be available in all units. Incident reporting system, both near miss and ME, *with*

intention to prevent incidents rather than punishment, should be in place and will all help creating and maintaining safe NICU.

Word count: 470

86. The effect of fluids given to mothers antenatally on newborns' weight loss after birth.

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Background: Excessive weight loss used to be an indicator of inadequacy of breast-feeding and sometimes leads to unnecessary initiation of formula feeding. The normally accepted weight loss percentage within the first few days of life in a full term healthy newborn is 7-10%. However other factors can lead to weight loss and should be considered.

Objectives: To study the effect of fluids given to mothers 24 hours prenatally; either orally or intravenous (IV); on the newborns' weight loss percentage within the first 72 hours.

Methodology: Prospective observational study, data were collected about both oral and IV fluids during labor or before CS. Newborns and their diapers were weighed every 8 hours till discharge.

Sample: All pregnant ladies experiencing uncomplicated pregnancy admitted to Makassed hospital from May the 1st till August the 31th in 2015, giving birth to a single full term, healthy baby whose weight is between 2500-3999 gram.

Results: A sample of 375 ladies and their babies were studied. 68% of the mothers received IV fluids. The administration of IV fluids 24 hours before delivery showed a statistically significant effect on newborn's weight loss at 48 hours with a $p = 0.047$ ($p < 0.05$) compared to those who didn't receive any fluids with a mean weight loss of 190g vs 156 g (5.9 vs 4.8 %) respectively. However there was no exact cut point of fluids' amount to decide at what level the fluids starts to show a significant difference ;this may be justified to lack of wide range of variance in IV fluids amount as most of females received less than 1500 cc.

Other predictors of newborns' weight loss were feeding method ;where exclusively breast fed showed less weight loss than partially breast in combination with formula (168 ,5.2% g VS 215 g, 6.5%) with $p = 0.03$. CS delivery and Induced labor showed marginal significant effect with a $p < 0.05$ in comparison with spontaneous normal vaginal delivery. Moreover neonatal output in the form of diaper weight in the first 24 hours had statistically significant effect on weight loss (mean weight loss 145 g ,4.5% with a $p = 0$).

Conclusion: newborns' weight loss is a multifactorial process. IV fluid infused 24 hours antenatally should be considered as one of the important factors that may contribute to early false newborn weight loss in the first 48 hours of life; for which parents should be reassured excluding pathological causes.

Word count: 400

87. Association between nitrate level in water and the occurrence of parasitic infections in the Gaza Strip, Palestine.

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Background: The main water resource in the Gaza Strip is facing a serious challenge in term of quantity and quality posing significant health threats on Gaza population. The nitrate levels in 86.7% of wells in the Gaza Strip exceeded the WHO recommended guideline limits. High nitrate levels were reported in residential areas of the Gaza Strip reflecting the percolation of the wastewater to the underneath aquifer through the networks, cesspits or septic tanks. According to health statistics, water-borne disease including parasitic infections were reported in the five districts of the Gaza Strip. In the last five years between 2009 and 2013, 57191 cases of parasitic infections were reported and showed a fluctuation trend. The aim of the study was to explore the association between the occurrence of parasitic infections and the level of nitrate in water in the Gaza Strip, Palestine.

Methods: A Geodatabase was developed for the collected attribute and spatial data related to the municipal wells' nitrate level and for the incidence of the parasitic infection registered by health facilities in the Gaza Strip. The developed database was imported into Arc GIS software for map generation and ordinary kriging method was used as geo- statistical tool for analysis and production of surface modeling maps for Nitrate levels. The special distribution of the parasitic infections was visualized using GIS and future overlaying and integrated maps were created for the nitrate level and the incidence of parasitic infections. The relationship between nitrate level in the municipal wells and the incidence of parasitic infection was examined using linear regression analysis methods.

Findings & Interpretation: There were statistically significant positive associations between nitrate level and the occurrence of parasitic infection in 2011 and 2012. The study helped to visualize the distribution of parasitic infections per the five districts and per the health facilities' catchment areas in the Gaza Strip. The study also showed the trend over time and highlighted the areas where the highest prevalence of parasitic infection were located.

It could be concluded that the higher nitrates level in water is more associated with parasitic infections that can be explained by the possible effect of poor wastewater management and the consequent infiltration into the soil and the aquifer. An effective national strategies need to be developed for better wastewater management and health monitoring in the Gaza Strip.

Word count: 386

88. Genotoxicity of recycling electronic waste in Idhna, Hebron District, Palestine

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Abstract submitted by Mazin Qumsieh on October 5, 2015 mazin@qumsiyeh.org

Electronic waste (e-waste) is solid waste which accumulates because of short life span of electronic equipments. Most e-waste ends up in landfills while some is recycled. In Palestine, a major site for work on e-waste recycling is the village of Idhna in the Hebron District (much of it originates from Israel). The objective of this study was to evaluate the effects of e-waste on human DNA damage and chromosome breaks. The test sample was 46 non-smoker individuals with direct exposure to e-waste either employed in the workshops or resident in Idhna. 16 controls were used from Bethlehem and Al-Aizariya (Bethany). DNA damaged was evaluated using the COMET assay, while chromosome aberrations were tested by using conventional cytogenetic techniques. The average of the total number of chromosomes with aberration was 3.77 in test samples while in controls the average was 0.75. Chromosome aberration frequency was statistically different between exposed and control samples for chromatid and chromosome breaks, formation of rings, and total CA. No significant difference was observed between exposed and controls for incidents of dicentric and tetraploidy. The Comet assay showed that there was significant different between exposed and control for DNA damage ($P < 0.05$). The results of this study demonstrate potentially grave health consequence for recycling e-waste in Idhna and we suggest some potential remedies. This is the second study in the occupied Palestinian territories of this nature. A previous study (Hammad, and Qumsiyeh. 2013, Intl J Env St 70:655-662) showed significant genotoxic effect of Israeli industrial settlement discharge on human populations in Salfit (northern West Bank). Considering increased cancer rates and congenital birth defects

Key word: Electronic waste, DNA damaged , Chromosomal aberration, comet assay , Genotoxicity.

Word count: 267

89. The health status of the Palestinians Arabs in Israel: An overview

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Abstract was submitted by Mohammad Khatib on November 30, 2015 (Khatib.health@gmail.com)

Background The total population of Palestinians in Israel in Mid-2014 was 1,350,800 persons (excluding the residents of Occupied East Jerusalem and the Golan Heights). They comprise 17.0% of the total population in Israel. The Palestinian community in Israel is very young with 36.0% age 14 and under on average; this rate increases to 49.1% in the South. According to the MoH reports, there is a gap between Arabs and Jews in most of the health indicators; life expectancy, IMR, chronic morbidity, and health behaviors. Most of the official surveys on the Arabs health are based on small samples and don't consider the specific characteristics of Arab population (composition, Geographic Distribution, etc.). The aim of this work is to present the overall data about the health status of the Palestinians live in Israel as part of the socioeconomic survey.

Methods The survey included a sample of 1698 Palestinian households in Israel (7115 subjects) live in the North (896), Haifa region (271), Naqab (293) and the Center (238). The questionnaire included demographic information, socio-economic information, housing conditions, standards of living, education, culture, health and environment and data was collected by trained interviewers through face to face interviews.

97.0% of the total questionnaires were completed (1,698 questionnaires). Fieldwork was completed in the period between March and June 2014.

Results 14.5% of Palestinians in Israel suffer from chronic diseases, distributed as 14.4% of females and 14.6% of males. The highest rate of chronic diseases is found in mixed cities (21.5%) and in large communities of over 15,000 residents (15.7%), and the lowest rate is found in the unrecognized villages (4.2%). 5.7% suffer from diabetes; 5.4% of females and 6.1% of males. 8.7% of Palestinians in Israel suffer from moderate or severe difficulties in their Activities of Daily Living (ADL), and the rate rises with age, reaching 23.7% amongst the 50-59 age group and 50.5% among those aged 60 and above. 20.1% of the Palestinians in Israel are smokers (35.9% of males and 4.0% of females) while 7.3% (10 years and above) smoke the *nargila*. Around 37.6% of Palestinians in Israel exercise and play sports and 16.0% always exercise.

41.5% of marriages are within the family (consanguineous marriages) and this percentage increases dramatically in the South to 69.1%.

Conclusions Compared to the Jewish majority, Palestinians in Israel are suffering from more chronic diseases, lack of health services, unhealthy behaviors. Data shows differences within the Palestinians according to some characteristics. These findings should be used as base for national health strategic planning and intervening aim to improve and promote the health status of the Palestinians Arab population.

Word count: 431

90. ‘Which research methods are appropriate for identifying factors affecting survival among women with breast cancer in the Gaza Strip?’

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Abstract was submitted by Shaymaa AlWaheidi on November 30, 2015 (drshaima.wahaidi@gmail.com)

Background Women in Gaza, Palestine, experience their first pregnancies at a relatively young age, have a high subsequent fertility rate, usually breastfeed their children, and rarely use hormone replacement during and subsequent to the menopause. All these characteristics predispose to a low incidence of breast cancer.

Although there has been descriptive research showing the poor survival of women diagnosed with breast cancer in Gaza, the factors for this do not appear to have been investigated in depth. A review was conducted to identify appropriate research methods for identifying factors affecting survival among women with breast cancer in Gaza. The review question was: ‘‘which research methods are appropriate for identifying factors affecting survival among women with breast cancer in the Gaza Strip?’’

Methods A literature search was conducted to identify potentially relevant studies on breast cancer which were either (i) done in Gaza or other parts of Palestine; or (ii) or in other low and middle income countries in the Middle East. A thematic analysis was carried out to document the research methods that have been used to measure survival and factors affecting it among women with breast cancer. The purpose of each study was documented, where it was conducted, and the methods used to collect, analyse, and interpret data, and report results.

Findings Twelve relevant studies were identified, four in Gaza and eight elsewhere. A retrospective cohort study showed that 52.7% of women diagnosed with breast cancer in Gaza present at Stages III and IV, and only 53.4% are alive 5 years later. These proportions compare unfavourably with those in other populations. Although some cross sectional studies has postulated reasons of these worrying figures, there are no studies exploring the reasons for them,

nor any that assess the quality of diagnostic care and treatment. Three cross-sectional studies reported Palestinian women's views on screening mammography. None of them acknowledged the low prior probability of breast cancer because of protective factors among women in Gaza, nor the increasing consensus that screening mammography does not reduce mortality and is cost-ineffective.

Interpretation Women with breast cancer in Gaza present to the health services at a relatively late stage of the disease and have poor survival chances. Evidence is needed to identify ways to improve survival among with women with breast cancer in Gaza. A prospective cohort study of women presenting to the health services with breast symptoms, using a combination of qualitative and quantitative data, would be an appropriate starting place. Further research on mammographic screening for women in Gaza cannot be justified.

Word count: 419

91. "Public health research system in Palestine: Challenges and prospects"

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Background: Public Health Research System (HRS) is the bedrock of health systems, to improve the population health and responsiveness and equity, and use the knowledge towards a sustainable development. There is international concern in HRS under the term 10/90 gap, particularly in developing countries. The Palestinian HRS has a remarkable case; most likely due to system gaps and unstable environment. The pace of its activities is encouraging despite the shortcomings; its landscape is not sufficiently investigated inasmuch a lack of knowledge to be strengthened. The study seeks to understand PHRS by investigating its governance and policy, stakeholder, challenges and conclude best recommendations for system development.

Method: This is a preliminary study conducted in Gaza and West Bank from January to July 2015; as a part of PhD project. A contemporary observational situation analysis design was adopted using qualitative methods. The institutions from three sectors were targeted as follow: academic public health faculties, units at MOH and NGOs and international agencies. Policy makers, academicians, researchers and representatives were selected purposively through a proposed list which was peer-reviewed; some of them invited for eighteen in-depth interviews (IDI), the rest for three sectorial focus group discussions (FGDs), with literature and documents review. Data were analysed thematically using manual matrices analysis, Word, and Excel programs.

Findings: PHRS is promising mainly in Public health. Six academic institutions and nearly forty local private, NGOs and international agencies, are remarkably producing public health research, but probably without regulated national policies. The majority emphasized; governance is not well-organized in managing functions, and HRS activities most likely scattered and institutionally or individually driven. There is a consensus that financing is significantly very timid, it does not essentially itemized in central budgets. Three main HRS stakeholders involved; academic faculties as a producer, private, NGOs and international agencies as a producer or funder simultaneously, and government MoH as a user or MoF as a funder. The international role in supporting PHRS is inconspicuous although of some successful initiatives (e.g. establishing PNIPH, Norwegian public health institute and UN agencies' contributions, research grants by QRC and MoHE). Interestingly, there is scarcity of human resources with poor incentives system, and needed facilities are still posing a gap. Responses agreed that PHRS priorities are inconsistent and efforts are uncoordinated with poor multidisciplinary in production and utilization. Dissemination among stakeholders and research application are questionable. Health research culture is not sufficiently-promoted and commitment is not politically-endorsed. The study indicated to precious opportunities to strengthen PHRS synergistically through best strategies.

Conclusion: Palestine is a fertile place for health research; it is the mainstay of state-building, health system particularly. Palestinian HRS is a nascent with uncertain structure and inactive organizing body, even political commitment support. Despite the growth of PHRS actions, the hoped level is not reached yet. Therefore, a sectoral development intervention should be taken, through reactivating a unified representative body and building cooperatively a national health research policy, to regulate the system appropriately, to bridge the gaps and afford resources adequately, and to produce and utilise the research effectively.

Word count: 503