

# Reproductive and non-reproductive health status of women aged 15 years and above in southern Jordan

F.A. Abu-Moghli,<sup>1</sup> I.A. Khalaf,<sup>1</sup> S. Tokiko,<sup>2</sup> I. Atsuko,<sup>2</sup> M.M. Nabolsi<sup>1</sup> and B.A. Al-Sharairi<sup>3</sup>

## الحالة الصحية الإنجابية وغير الإنجابية للفتيات بعمر 15 سنة فأكثر جنوب الأردن

فتحية أبو مغلي، إنعام خلف، ساتو توكيكو، إيموتو أتسوكو، منار نابلسي، بسام الشرايري

الخلاصة: يزيد الفشل في إيلاء الاهتمام بصحة النساء، بما في ذلك تلبية احتياجات الصحة الإنجابية لديهن، من تكلفة الرعاية الصحية، ويفاقم الإجحاف الاجتماعي. وقد قيّمت هذه الدراسة الوصفية الحالة الصحية الإنجابية وغير الإنجابية للفتيات أكبر من عمر 15 سنة في الجيوب التي ينتشر فيها الفقر في جنوبي الأردن. وقد اختار الباحثون قريتين بطريقة اعتيادية مستهدفة، ودُعيت جميع النساء في القريتين للمشاركة في "أسبوع صحة الأسرة": وقد استجاب 259 منهن للدعوة. ومع أن 49.4% من النساء اللاتي اشتركن في دراسة المسح كنَّ يعانين من فرط الوزن أو السمنة، فإن 8.5% منهن فقط كنَّ يعانين من ارتفاع ضغط الدم. وتشتمل العوامل المثيرة للقلق بالنسبة للصحة الإنجابية على ارتفاع نسبة الفتيات اللاتي يتزوجن في عمر مبكر (15-20 سنة) حيث بلغت (76.8%)، وولادة أكثر من 5 أطفال (43.1%)، وانخفاض مستوى الهيموغلوبين عن 12 غرام في الديسلتر، مما يشير إلى إصابتهن بفقر الدم (55.5%). وكانت الإصابة بالعداوى البولية هي أكثر المشاكل الصحية شيوعاً (29.0%). ومن هنا، يجب أن يكون مقدّمو الرعاية الصحية أكثر وعياً بالاحتياجات الصحية للنساء في الأردن، على نحو عام، وبالتحديد للنساء اللاتي يعشن في المناطق المحرومة.

**ABSTRACT** Failure to address women's health, including their reproductive health needs, increases health care costs and social inequity. This descriptive study assessed the reproductive and non-reproductive health status of women over 15 years old in poverty pockets in the southern region of Jordan. Two villages were selected using purposive sampling and all women in the villages were invited to participate in a "healthy family week": 259 responded to the invitation. Although 49.4% of the surveyed women were overweight or obese, only 8.5% had high blood pressure. Reproductive health concerns included the high proportions of women married at an early age (15–20 years) (76.8%), having 5+ children (43.1%) and with haemoglobin level < 12 g/dL, indicating anaemia (55.5%). Urinary tract infection was the most common health problem (29.0%). Health care providers should be sensitized to the health needs of Jordanian women in general and those living in disadvantaged areas in particular.

## État de santé génésique et non génésique des femmes âgées de 15 ans et plus au sud de la Jordanie

**RÉSUMÉ** L'absence de prise en compte de la santé des femmes, et notamment de leurs besoins en santé génésique, augmente le coût des soins de santé et l'inégalité sociale. La présente étude descriptive a évalué l'état de santé génésique et non génésique de femmes de plus de 15 ans dans des poches de pauvreté de la région méridionale de Jordanie. Deux villages ont été sélectionnés selon un échantillonnage dirigé et toutes les femmes des villages ont été invitées à participer à une « semaine de la santé de la famille » : 259 ont répondu à l'invitation. Bien que 49,4 % des femmes interrogées étaient en surpoids ou obèses, seules 8,5 % présentaient une hypertension artérielle. Une forte proportion (76,8 %) de femmes mariées jeunes (entre 15 et 20 ans), le fait d'avoir cinq enfants ou plus (43,1 %) et un taux d'hémoglobine inférieur à 12 g/dl, indiquant une anémie (55,5 %) comptaient parmi les préoccupations de santé génésique. Les infections urinaires étaient le problème de santé le plus fréquent (29,0 %). Les prestataires de soins de santé devraient être sensibilisés aux besoins sanitaires des femmes jordaniennes en général et des femmes vivant dans des zones défavorisées en particulier.

<sup>1</sup>Faculty of Nursing, University of Jordan, Amman, Jordan (Correspondence to F.A. Abu-Moghli: fathieh@ju.edu.jo).

<sup>2</sup>Integrating Health and Empowerment of Women in the South Region Project, Japan International Cooperation Agency, Amman, Jordan.

<sup>3</sup>Amman Airport Health Centre, Ministry of Health, Amman, Jordan.

## Introduction

Women's reproductive health problems and illnesses, which are often preventable, harm not only the women but also their children and families and consequently the quality of life in a region. The health of many women in developing countries has been traumatized by difficult environmental conditions, excessive workload at home and outside, repeated child bearing and inadequate diet and health care [1]. Yet the health status of women has only recently been addressed [2,3].

Failure to address women's health care needs throughout their lifespan, including their reproductive health needs, increases both health care costs and social inequity in the Eastern Mediterranean region [4]. In view of this, the content of the 2007 Jordanian Family Health Survey was expanded to include additional data on ever-married women's reproductive health, knowledge of sexually-transmitted infections, domestic violence and early childhood development [5]. Previous studies in Jordan indicated that women suffer from an appreciable level of morbidity as they approach menopause, including urinary incontinence, urinary tract infections (UTI), reproductive tract infections (RTI) and genital prolapse [1]. The health awareness of these women lagged behind the identified prevalence of the studied conditions. Similar results were reported by a study of women aged 50–65 years in underprivileged areas of southern Jordan [6]. Women were reported to have multiple menopause-related symptoms and morbidities. The majority of them did not receive any health education about this phase of their life, and preventive health practices and health-promoting behaviours were relatively uncommon. Another 2-phase community based study in Belqa governorate indicated that three-quarters of women suffered from one or more reproductive and/or non-reproductive disease [3]. It also indicated that women

generally tended to underestimate the degree to which they were affected by these morbidities.

The present study aimed to assess the reproductive and non-reproductive health status of women aged over 15 years in the southern region of Jordan. The results might provide data that can be used by health care administrators and providers in establishing new, more effective national guidelines and procedures for health care services tailored to the health needs of women in disadvantaged regions.

## Methods

Data for this study were derived from a project entitled "Integrating Health and Empowerment of Women in the South Region". The study utilized a 2-phase survey design to assess the reproductive and non-reproductive health status of women in 2 target areas in the southern region of Jordan.

### Setting and sample

Southern Jordan is a disadvantaged region compared with other regions of the country, containing 6 of the country's 20 poverty pockets according to the 2004 report *Jordan poverty assessment* [7]. The project chose its focal areas from these poverty pockets, where an intensive effort was to be made to improve the situation of women's health as well as enhancing their empowerment by taking an integrated and multi-sector approach. Using a purposive sampling procedure, a village from Aqaba governorate and another from Ma'an governorate, which fulfilled the criteria for inclusion, were selected to represent the southern region of Jordan. Criteria for the selection of the communities for this study included: being a focal area; existence of strong leadership with a community leader (*sheikh*); community members' willingness to carry out collective voluntary work for the community; and existence

of a community-based organization (*jamaieh*).

All women aged 15 years and above in the selected villages were invited to participate in a healthy family week by visiting the nearest primary health care centre where health examinations and treatments were carried out. The sample included 259 women who responded to the invitation; 113 from Aqaba governorate and 146 from Ma'an governorate. The overall response rate was 56.4% (71.5% in Aqaba and 48.5% in Ma'an) based on 2006 census data.

### Study tool

A data collection tool to assess the health condition of women was developed by the researchers with the assistance of a representative from the Jordanian Ministry of Health (MOH) and the physicians who were part of the data collection team. Development of the tool was based on a thorough review of the literature and a review of the health assessment tools available at the MOH and other health care sectors that had been tested for validity and reliability. The tool comprised 2 parts. Part 1 collected data on: demographic variables; reproductive health history; and physical and physiological measurements (including height, weight and blood pressure). Part 2 was the results of a current health assessment (including measurement of haemoglobin level and a reproductive health examination). Several meetings were conducted between the consultants, the project managers from Japan International Cooperation Agency and the MOH and the physicians (data collectors) to validate the data collection instrument, to ensure that ethical issues were considered and to agree on the data collection method to be followed in order to ensure inter-rater reliability.

### Data collection

The study proposal and data collection tool were approved by the Directorate of Research and Technical Office at the

MOH that was assigned the responsibility as an institutional review board. The tribal leaders of the 2 villages were contacted, informed about the purpose of the study and asked for assistance in distributing the invitations for participation. The tribal leader of the selected villages encouraged the population to participate. Men who support the tribal leader visited and talked to the heads of the household and handed over the invitation cards directly to them. They also encouraged the heads of the households to let target women participate in the event by ensuring health checkups would be done free and that medicines would be provided free according to need. Moreover, since the communities consisted of the same family (tribe), there was a strong network within the community where information could spread easily. Transport was arranged by the project for one of the 2 communities where the members could not reach to the event venue on foot.

Two consecutive healthy family weeks (1 in each village) were set up for data collection purposes. Each healthy family week extended over 6 days (from 9–14 June and from 23–28 June 2007). Five professional nurses, 3 midwives, 6 female physicians (2 gynaecologists, 2 family physicians and 2 paediatricians) and 3 laboratory technicians collected the data. All members of the data collection team were MOH staff. They were trained prior to the data collection on the methods of conducting interviews and performing health assessments.

Data collection in each village was designed as a 2-phase process. The first phase was conducted by nurses and midwives and consisted of a structured personal interview to collect demographic data and data related to the women's general and reproductive health history and an measurements of body temperature, blood pressure, height and weight. Three successive measurements each of vital signs, weight and height were taken to assure the reliability of the measures. The successive

measurements agreed within 0.1 cm for height and 0.1 kg for weight and were used for the calculation of body mass index (BMI) (weight in kg/height in m<sup>2</sup>). During this phase, the women were familiarized with the purpose of the study and their verbal consent to participate in the second phase was obtained. They were informed that their participation was voluntary and that they could withdraw at any time.

The second phase was conducted by the physicians and involved a follow-up physical examination, including a pelvic examination, and blood sample for haemoglobin testing. All women (100%) were interviewed and consented to the physical examination. Single women and those suspected or confirmed pregnant were not eligible for the pelvic examination, leaving 196 eligible of whom 131 consented.

Ethical considerations including privacy and confidentiality were ensured throughout the survey to protect human rights. Additionally medical interventions were provided when needed. Ethical approval for the study was sought through the Jordanian MOH ethics committee.

## Definitions

BMI was classified as underweight (< 20 kg/m<sup>2</sup>), normal (20–25 kg/m<sup>2</sup>), overweight or obese (> 25 kg/m<sup>2</sup>) [8,9]. Hypertension was defined as systolic blood pressure  $\geq$  140 and/or diastolic blood pressure  $\geq$  90 mmHg [10]. Hb levels were classified as: low (< 12 g/dL), critically low (< 5.0 g/dL) or normal (> 15 g/dL) [11],

## Data analysis

Statistical analysis was performed using the statistical software package SPSS, version 11.5. Cross tabulation of the frequencies and percentages was done for all items under investigation. The chi-squared test was used to measure the relationship between the 2 villages in terms of all items and the null hypothesis was rejected at the 5% level ( $P \leq 0.05$ ).

## Results

### Demographic characteristics

The majority of the women in the sample were married (64.3%) and 38.2% were illiterate (Table 1). The great majority of participants from both Aqaba and Ma'an governorates were not working at the time of the study (96.4% and 91.8% respectively). There were no significant differences between the women in the 2 villages in terms of age distribution, marital status or employment status. However, the educational level was significantly higher in Ma'an than Aqaba ( $P < 0.001$ ).

### Physiological and physical measurements

Table 2 shows selected physiological and clinical measurements. Half of surveyed women (49.4%) had high BMI. Participants from Ma'an governorate had significantly higher BMI than those from Aqaba governorate (61.5% versus 33.9% respectively) ( $P < 0.001$ ). The majority of the women had normal blood pressure levels (91.5%), with a highly significant difference between the 2 villages ( $P < 0.001$ ).

Of the 216 (83.4%) women whose Hb concentration was checked more than half (55.5%) had abnormally low levels (< 12 g/dL), with no significant difference between Aqaba and Ma'an (61.8% and 51.2% respectively) ( $P = 0.12$ ). None of the women in either village had Hb > 15 g/dL and none of the women approached the critically low limit of Hb < 5.0 g/dL [11]. Only 2 women (from Ma'an governorate) (1.6%) had Hg 8–< 9 g/dL. The others had Hb between 9–< 12 g/dL (Table 2).

### Reproductive health history

Table 3 shows that the majority of the survey sample (76.8%) were married at an early age (15–20 years). Around half of the sample (58.5%) has been pregnant 5+ times while 43.1% had 5+ children and 2% had 5+ dead children.

**Table 1 Demographic characteristics of the sample of women in 2 governorates of south Jordan**

Demographic characteristic	Aqaba ( <i>n</i> = 113) <sup>a</sup>		Ma'an ( <i>n</i> = 146) <sup>a</sup>		Total ( <i>n</i> = 259) <sup>a</sup>		<i>P</i> -value
	No.	%	No.	%	No.	%	
<i>Age (years)</i>							
15–20	23	20.4	21	14.4	44	17.0	0.14
21–25	21	18.6	18	12.3	39	15.1	
26–30	14	12.4	32	21.9	46	17.8	
31–35	8	7.1	15	10.3	23	8.9	
36–40	17	15.0	16	11.0	33	12.7	
41–45	3	2.7	11	7.5	14	5.4	
46–50	7	6.2	9	6.2	16	6.2	
≥ 51	20	17.7	24	16.4	44	17.0	
<i>Marital status</i>							
Single	26	23.0	36	24.8	62	24.0	0.80
Married	76	67.3	90	62.1	166	64.3	
Divorced	1	0.9	2	1.4	3	1.2	
Widowed	10	8.8	17	11.7	27	10.5	
<i>Educational level</i>							
Illiterate	50	44.2	49	33.6	99	38.2	< 0.001
Elementary	23	20.4	17	11.6	40	15.4	
Preparatory	24	21.2	29	19.9	53	20.5	
High school	11	9.7	35	24.0	46	17.8	
Diploma	1	0.9	8	5.5	9	3.5	
Bachelor degree	3	2.7	8	5.5	11	4.2	
Postgraduate degree	1	0.9	0	0.0	1	0.4	
<i>Employment status</i>							
Working	4	3.6	12	8.2	16	6.2	0.10
Not working	107	96.4	134	91.8	241	93.8	

<sup>a</sup>Data were missing in some categories.

There were no significant differences between women from the 2 villages in any of the variables, except for age at marriage. A higher percentage of women from Aqaba governorate (86.4%) were married when they were ≤ 20 years old compared with women from Ma'an governorate (69.1%) ( $P < 0.001$ ).

Only 25.9% of the women used a family planning method. Although there was no significant difference between Aqaba and Ma'an governorates in the proportions using family planning there were significant differences regarding the methods used ( $P < 0.001$ ). The most commonly used family planning method in Aqaba was the intrauterine device (IUD) (30.8%), while in Ma'an it was breastfeeding (50.0%).

Few of the sample women (11.6%) had a history of infertility. More than one-third of the sample (37.9%) had a history of spontaneous or induced abortion. The difference between participants from the 2 villages were not statistically significant

### Current health problems

The top 12 most common health problems (experienced by more than 3% of the sample), as reported by the women and confirmed by physicians, in the 2 villages are presented in Table 4. UTI was the most common health problem overall (29.0%), followed by congested throat, gastric problems, atrophic vagina and RTI (bacterial vaginitis and candida). Anaemia ranked 7th and was

diagnosed for only 6.6% of women. There were differences in the pattern of health problems between the 2 villages; e.g. the most common health problem in Aqaba governorate was UTI (29.0%), while in Ma'an it was congested throat (25.3%).

## Discussion

### Demographic characteristics

The 2 selected villages in the present study are from poverty pockets in Jordan, and this was reflected by an illiteracy rate of 38.2% which is much higher than the illiteracy rate of women in the general population of Jordan (12%) [5]. This may explain the high



**Table 2 Selected physiological and physical measurements of the sample of women in 2 governorates of south Jordan**

Measurement	Aqaba (n = 113)		Ma'an (n = 146)		Total (n = 259)		P-value
	No	% <sup>a</sup>	No	% <sup>a</sup>	No	% <sup>a</sup>	
<b>Temperature (°C)</b>							
< 37.5	110	97.3	136	93.2	246	95.0	0.10
<b>BMI</b>							
Underweight	27	24.1	10	7.0	37	14.5	< 0.001
Normal weight	47	42.0	45	31.5	92	36.1	
Overweight/obese	38	33.9	88	61.5	126	49.4	
(Missing data)	3	2.7	10	6.8	13	5.0	
<b>Blood pressure</b>							
Normal	111	98.2	126	86.3	237	91.5	< 0.001
Hypertension	2	1.8	20	13.7	22	8.5	
<b>Haemoglobin</b>							
Normal	34	38.2	62	48.8	96	44.4	0.12
Anaemic	55	61.8	65	51.2	120	55.5	
(Missing data)	24	–	19	–	43	–	
<b>Haemoglobin level (g/dL)</b>	<b>(n = 89)</b>		<b>(n = 127)</b>		<b>(n = 216)</b>		0.12
08–< 9	0	0.0	2	1.6	2	0.9	
09–< 10	2	2.2	2	1.6	4	1.9	
10–< 11	20	22.5	18	14.2	38	17.6	
11–< 12	33	37.1	43	33.9	76	35.2	
12–< 13	22	24.6	37	29.1	59	27.4	
13–< 14	12	13.5	19	15.0	31	14.4	
14–< 15	0	0.0	6	4.7	6	2.8	

<sup>a</sup>Percentages were calculated based on the total number of women with data recorded in each category.

BMI = body mass index.

level of unemployment (93.8%), although the unemployment rate in the present study did not agree with the results of a community-based survey of women in southern Jordan conducted in 2005 in which only 4.6% of women were working [12].

### Physiological and clinical measurements

BMI has been widely used and accepted as a simple method to determine the risk of developing health problems by weight status [8,9,13]. Half of surveyed women were overweight or obese and this finding agrees with several other studies conducted in Jordan [2,6,14]. The rate of obesity/overweight is a health concern in the Jordanian community [15]. It has been linked to dyslipidaemia and type 2 diabetes, which

in turn, elevate the risk of cardiovascular disease (CVD) [6]. Moreover, obesity causes serious medical complications and impairs quality of life and, in older persons, it can exacerbate the age-related decline in physical function and lead to frailty [9].

Only 8.5% of the women surveyed had high blood pressure levels. This contradicts a WHO report in 2005 indicating that 21% of Jordanian women had high blood pressure [15] and 2 other studies that reported higher percentages of women with elevated blood pressure in southern [6] and in northern Jordan [16]. The statistical significant difference between women from the 2 villages is consistent with the differences in the rate of obesity. A relationship has been shown between obesity and elevated blood pressure.

A high rate of hypertension has been linked to increased CVD mortality among overweight individuals [17]. In addition to BMI, high blood pressure is positively associated with illiteracy [18]. However, this disagrees with the results of this survey as women from Ma'an governorate had higher BMI but lower illiteracy rates than women from Aqaba.

Although no statistics about anaemia have been published for Jordan since 1991, anecdotal evidence and discussions between health care clinicians indicate that it is prevalent among the Jordanian population [19] and this was confirmed by other studies [1,16] and by the situation analysis conducted by the Communication Partnership Program in Jordan [20]. In the present study none of the women in either village whose Hb level was checked had

**Table 3 Reproductive health indicators of women in 2 governorates of south Jordan**

Indicator	Aqaba		Ma'an		Total		P-value
	No.	% <sup>a</sup>	No.	% <sup>a</sup>	No.	% <sup>a</sup>	
<i>Age at marriage (years)</i>							
15–20	76	86.4	76	69.1	152	76.8	< 0.001
21–25	6	6.8	28	25.5	34	17.2	
26–30	3	3.4	5	4.5	8	4.0	
31–35	3	3.4	1	0.9	4	1.0	
<i>No. of pregnancies</i>							
0	4	4.7	4	3.7	8	4.1	0.99
1	6	7.0	7	6.4	13	6.7	
2–3	16	18.6	19	17.4	35	17.9	
4–5	10	11.6	15	13.8	25	12.8	
> 5	50	58.1	64	58.7	114	58.5	
<i>No. of children</i>							
0	7	8.0	7	6.5	14	7.2	0.95
1	10	11.5	10	9.3	20	10.3	
2–3	17	19.5	24	22.2	41	21.0	
4–5	15	17.2	21	19.4	36	18.5	
> 5	38	43.7	46	42.6	84	43.1	
<i>No. of dead children</i>							
0	55	63.2	80	72.7	135	68.5	0.46
1	19	21.8	17	15.5	36	18.3	
2–3	7	8.0	7	6.4	14	7.1	
4–5	3	3.4	5	4.5	8	4.1	
> 5	3	3.4	1	0.9	4	2	
<i>History of abortion</i>							
0	49	55.7	74	67.3	132	62.1	0.39
1	17	19.3	15	13.6	32	16.2	
2–3	18	20.5	15	13.6	33	16.7	
≥ 4	4	4.5	6	5.4	10	5.0	
<i>Infertility</i>							
No	80	92.0	95	85.6	175	88.4	0.26
Primary	3	3.4	4	3.6	7	3.5	
Secondary	4	4.6	12	10.8	16	8.1	
<i>Family member first degree relative with breast cancer</i>							
Yes	1	1.0	–	–	1	0.4	0.41
No	102	99.0	145	100.0	247	99.6	
<i>Delivered in the last 40 days</i>							
Yes	3	3.4	6	5.5	9	4.6	0.37
No	85	96.6	103	94.5	188	95.4	
<i>Current pregnancy status</i>							
Pregnant	12	14.0	20	18.9	32	16.7	0.55
Not pregnant	70	81.4	83	78.3	153	79.7	
Don't know	4	4.7	3	2.8	7	3.6	
<i>Use of family planning</i>							
Yes	21	24.4	29	27.1	50	25.9	0.40
No	65	75.6	78	72.9	143	74.1	
<i>Type of family planning method</i>							
Intrauterine device	8	30.8	10	29.4	18	30.0	< 0.001
Breastfeeding	–	–	17	50.0	17	28.3	
Oral contraceptive pill	7	26.9	3	8.8	10	16.7	
Lactational amenorrhea method	5	19.2	2	5.9	7	11.7	
Condom	2	7.7	–	–	2	3.3	
Progesterone implant (Implanon®)	2	7.7	–	–	2	3.3	
Periodic abstinence or withdrawal	–	–	1	2.9	1	1.7	

<sup>a</sup>Percentages were calculated based on the total number of women with data recorded in each category.

**Table 4 Most common health problems as reported by the survey sample of women in 2 governorates of south Jordan**

Health problem	Aqaba (n = 113)	Ma'an (n = 146)	Total (n = 259)
	%	%	%
Urinary tract infection	39.8	20.6	29.0
Congested throat	17.7	25.3	22.0
Gastric problem <sup>a</sup>	23.9	15.8	19.3
Atrophic vagina	24.8	11.0	17.0
Bacterial vaginitis	15.9	12.3	13.9
Vaginal candidiasis	13.3	13.0	13.1
Anaemia	4.4	8.2	6.6
Cystocele	6.2	4.1	5.0
Bronchial asthma	6.2	2.7	4.3
Otitis media	5.3	2.7	3.9
Cardiac problem <sup>b</sup>	6.2	1.4	3.5
Diabetes mellitus	0.9	4.8	3.1

<sup>a</sup>Stomach ache and burning sensation; <sup>b</sup>Valvitis.

normal Hb levels and more than half had levels < 12 g/dL, with no significant difference between the 2 villages. According to international criteria this classifies the women as having anaemia [10,21,22]. Khader et al. argued that in developing countries anaemia probably reflects a nutritional deficiency due to poor economic status. They questioned the role of menorrhagia and hypermenorrhoea in causing anaemia among women of child-bearing age [16]. Anaemia lowers women's tolerance of blood loss and resistance to infection, contributing to maternal illness and death [4]. Fortunately, none of the women approached the critically low Hb level of < 5.0 g/dL [21].

### Reproductive health history

The mean age at first marriage in Jordan has risen significantly during the period 1979–2004 (from 21.0 years in 1979 to 25.6 years in 2004) and this has contributed to lowering the number of expected births to Jordanian woman during this shortened reproductive period [11]. However, the results of the present survey show that a majority of the survey women were married at an early age. The rate of early marriage reported in this study was much higher

than those reported by other studies of Jordanian women [11,12,19]. This may be related to differences in educational level and literacy which were lower for this sample of women in rural areas than the general population. According to the Department of Statistics education had a tangible impact on delaying the marriage time for females and correlates inversely with child deaths [11].

According to Youssef a steady increase in contraception use has been reported among Jordanian women in the last 12 years, with considerable variation between different regions [6]. The prevalence of current contraception use among women in the central region (58%) was higher than among women in the northern region (54%) and reached its lowest level (48%) among women in the southern region. The differentials in the use of modern contraceptives followed the same pattern [9]. Similar results were reported by the Atlas of Health Indicators in 2004 [23] by Shakhatreh et al. in 2006 [6]. The present survey found even lower rates, with only one-quarter of the participants using a family planning method, most commonly IUD and breastfeeding.

### Current health problems

The results showed that UTI was the most common health problem among women overall, followed by congested throat and gastric problems. There were also variations in health problems between the 2 villages. Previous findings indicated hypertension was the main problem in southern Jordan, followed by hyperglycaemia, RTI, anaemia, varicose veins, bronchial asthma and peptic ulcer [6]. In the present survey, hypertension was not ranked among the most common problems, which agrees with the relatively low percentage of women with high blood pressure. Anaemia only ranked 7th while diabetes mellitus was ranked 12th. According to the WHO list of noncommunicable diseases and risk factors among women in Jordan, physical inactivity is ranked first followed by obesity, high blood pressure and high cholesterol at the same level, then diabetes and finally smoking [24]. Data on risk factors associated with nutrition-related noncommunicable diseases indicate a high prevalence of these risk factors in this population [14]. Southern Jordan is a disadvantaged region and economic and health-related indicators lag far behind those of other parts of the country [6].

Another study in the south of Jordan found results that were relatively similar to our results. It indicated that 39% out of 117 women who agreed to a vaginal examination had signs of a RTI and 31% reported symptoms of UTI, including dysuria, frequency of micturition or both. Yet that study was conducted on women over 50 years of age and was focused mainly on menopause-associated problems [1]. Another study reported that RTI were diagnosed in 55% of the women, anaemia in 40%, genital prolapse in 22% and UTI in 14%.

This comparison reveals some kind of consensus on at least 4 main health problems: UTI, RTI, anaemia and obesity (with all its associated risks). This finding is congruent with that of the MOH Communication Partnership Program that emphasized that the so-called lifestyle diseases, such as diabetes, obesity and CVD, have begun to replace

infectious diseases as the leading causes of morbidity and mortality in Jordan [20]. More importantly, many women did not realize they had a treatable health problem such as anaemia. According to Roudi-Fahimi, although anaemia is common throughout the Middle East and North Africa (regardless of a country's income level), few women with anaemia recognize the symptoms and seek treatment [4]. Al Ma'Aitah et al. called for increasing women's awareness of the relationship between lifestyle and healthy behaviours as an important issue for health professionals in promoting women's health in Jordan [2].

### Limitations of the study

Since the participation in the study was on voluntary basis, and since the researchers made no attempts to examine whether the participants differed from those who did not attend, the generalizability of the results may be limited.

## Conclusion

The study results support the idea that women in southern Jordan experience considerable reproductive-related and other morbidities. Health care providers should be sensitized to the health needs of women in general and those living in disadvantaged areas in particular. Provision of the necessary information related to healthy lifestyles and abnormal signs and symptoms is an essential element for women's empowerment.

## Acknowledgements

This study was funded by the Government of Jordan Ministry of Health and the General Secretariat of Higher Population Council, and the Japan International Cooperation Agency.

## References

1. Al-Qutob R. Menopause-associated problems: types and magnitude; A study in the Ain Al-Basha area, Jordan. *Journal of Advanced Nursing*, 2001, 33:613–620.
2. Al Ma'Aitah R, Haddad L, Umlauf M. Health promotion behaviors of Jordanian women. *Health Care for Women International*, 1999, 20:533–546.
3. Casterline JB, Sinding SW. Unmet need for family planning in developing countries and implications for population policy. *Population and Development Review*, 2000, 26:691–723.
4. Roudi-Fahimi F. *Women's reproductive health in the Middle East and North Africa*. Washington DC, Population Reference Bureau, 2003.
5. *Jordan population and family health survey 2007*. Amman, Department of Statistics and Calverton, Maryland, Macro International, 2008.
6. Youssef R. Contraception use and probability of continuation: community-based survey of women in southern Jordan. *Eastern Mediterranean Health Journal*, 2005, 11:545–558.
7. *The Hashemite Kingdom of Jordan. Poverty assessment*. Amman, World Bank, 2004 ([http://www.espp.gov.jo/Vol1June1\\_revised3%20\\_2\\_.pdf](http://www.espp.gov.jo/Vol1June1_revised3%20_2_.pdf), accessed 12 March 2012).
8. *World health statistics*. Geneva, World Health Organization, 2007.
9. Villareal D, Apovian C, Kushner R. Obesity in older adults: technical review and position statement of the American Society for Nutrition and NAASO, The Obesity Society. *Obesity Research*, 2005, 13:1849–1863.
10. *High blood pressure*. Medlineplus [online factsheet] (<http://www.nlm.nih.gov/medlineplus/highbloodpressure.html>, accessed 12 March 2012).
11. *Jordanian mothers, facts and figures*. Department of Statistics, The Hashemite Kingdom of Jordan [online factsheet] ([http://www.dos.gov.jo/dos\\_home\\_e/mother.htm](http://www.dos.gov.jo/dos_home_e/mother.htm), accessed 12 March 2012).
12. *Annual report year 2007*. Amman, Health Communication Partnership, 2007.
13. *World development indicators database*. The World Bank Group [online database] (<http://data.worldbank.org/sites/default/files/wdi07fulltext.pdf>, accessed 8 April 2012).
14. Madanat H, Brown R, Hawks S. The impact of body mass index and Western advertising and media on eating style, body image and nutrition transition among Jordanian women. *Public Health Nutrition*, 2007, 10:1039–1046.
15. *Global status report on noncommunicable diseases 2010*. Geneva, World Health Organization, 2011.
16. Khader YS et al. Prevalence of medical conditions among patients attending dental teaching clinics in Northern Jordan. *Journal of Contemporary Dental Practice*, 2007, 8(1):60–67.
17. Hu FB. Overweight and increased cardiovascular mortality: no French paradox. *Hypertension*, 2005, 46:645–646.
18. Jaddou HY, Bateiha AM, Ajlouni KM. Prevalence, awareness and management of hypertension in recently urbanized community, eastern Jordan. *Journal of Human Hypertension*, 2000, 14:497–501.
19. Jarrah S et al. Iron deficiency anemia (IDA) perceptions and dietary iron intake among young women and pregnant women in Jordan. *Journal of Transcultural Nursing*, 2007, 18:19–27.
20. *Health communication*. Jordanian Ministry of Health [website]. (<http://www.healthcomm.gov.jo/Default.aspx?tabid=79>, accessed 8 April 2012).



21. DeMoranville VE, Best MA. Hemoglobin test. In: Senagore AJ, ed. *Gale encyclopedia of surgery: a guide for patients and caregivers*. Farmington Hills, Michigan, The Gale Group, 2007 ([http://www.encyclopedia.com/topic/Hemoglobin\\_test.aspx](http://www.encyclopedia.com/topic/Hemoglobin_test.aspx), accessed 12 March 2012).
22. *Lab Tests Online*®. American Association for Clinical Chemistry [website] (<http://www.aacc.org/resourcecenters/LTOPresence/Pages/default.aspx> accessed 14 March 2012).
23. *Jordan: atlas of health indicators*. Calverton, Maryland, ORC Macro, 2004.
24. Markovic N et al. Adequacy of a single visit for classification of hypertensive status in a Nigerian civil servant population. *International Journal of Epidemiology*, 1994, 23:723–729.

### **WHO research shows effective simplified approach to preventing postpartum haemorrhage**

Between 2009 and 2010, UNDP/UNFPA/WHO/World Bank Special Programme of Research, Development and Research Training in Human Reproduction coordinated a randomized controlled trial in 8 countries that studied a simplified approach to management of the third stage of labour without controlled cord traction. The study, in which more than 24 000 women participated, showed that omitting controlled cord traction has little effect on the risk of severe bleeding and indicates that effective prevention of postpartum haemorrhage could be accomplished with just a uterotonic agent (primarily oxytocin). The findings have important implications for expanding access to effective care and could have a substantial impact on maternal survival in places where access to skilled medical staff is difficult.

Results of the study were published in the *Lancet*, Early Online Publication, 6 March 2012 ([http://www.thelancet.com/journals/lancet/article/PIIS0140-6736\(12\)60206-2/abstract](http://www.thelancet.com/journals/lancet/article/PIIS0140-6736(12)60206-2/abstract)).