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Uncovering and responding to needs for sexual and reproductive health care among poor urban female adolescents in Nicaragua

Liesbeth E. Meuwissen[1], Anna C. Gorter[2], Zoyla Segura[2], Arnold D. M. Kester[3] and J. A. Knottnerus[4,5]

1 *Netherlands Institute for Health Service Research, Utrecht, The Netherlands*
2 *Instituto CentroAmericano de la Salud, Managua, Nicaragua*
3 *Department of Methodology and Statistics, University of Maastricht, Maastricht, The Netherlands*
4 *Department of General Practice, University of Maastricht, Maastricht, The Netherlands*
5 *Health Council of the Netherlands, The Hague, The Netherlands*

Summary

BACKGROUND To meet the needs of female adolescents from low-income urban areas for sexual and reproductive health (SRH) care, vouchers providing free-of-charge access to SRH care at 19 primary care clinics were distributed in Managua, Nicaragua. These vouchers substantially increased the use of services, demonstrating that many adolescents are willing to use such services, if readily accessible. The voucher redemption made it possible to identify the nature of existing, but largely unmet, needs for SRH care.

METHOD The medical files from 3301 consultations with female adolescents were analysed using descriptive statistical methods and multiple logistic regression.

RESULTS Female adolescents presented SRH problems that merited medical attention. The mean number of problems presented was 1.5 per consultation: 34% of the vouchers were used for contraceptives, 31% for complaints related to sexually transmitted infection (STI) or reproductive tract infection (RTI), 28% for advice/counselling, 28% for antenatal check-up and 18% for pregnancy testing. A new category of health care users emerged: sexually active girls who were neither pregnant nor mothers and who sought contraceptives or STI/RTI treatment. Contraceptive use doubled among the sexually active non-pregnant voucher redeemers. Consultation with a female doctor younger than 36 years was associated with a higher chance of having contraceptives prescribed.

CONCLUSION Accessible and appropriate SRH care has the potential to make an important contribution to the increased contraceptive use, decreased risk of unwanted teenage pregnancies and decreased prevalence of STIs/RTIs among underserved adolescents. Once adolescents access the services, providers have a crucial role in ensuring current and continuing needs are met.

keywords adolescents, Nicaragua, sexual and reproductive health care, unmet needs, voucher programme, access to care

Introduction

Nicaragua has one of the highest adolescent fertility rates in Latin America, with 119 births annually per 1000 young women aged 15–19. High fertility rates are associated with low socioeconomic status and low educational attainment (INEC Instituto Nacional de Estadística y Censos & Ministerio de Salud 2001). In addition, adolescents experience high rates of unwanted pregnancy, illegal abortions and maternal mortality and are at high risk of contracting sexually transmitted infections (STIs), including HIV. As the use of contraceptives and condoms could diminish these risks, only 7% of sexually active female adolescents use a condom and only 47% use another modern method of contraception (INEC Instituto Nacional de Estadística y Censos & Ministerio de Salud 2001).

An important reason for the low use of contraceptives is that adolescents have limited access to contraceptives and counselling in Nicaragua (Braddock *et al.* 1995; Zelaya *et al.* 1996; Berglund *et al.* 1997). Although wide agreement exists that health care services should respond to these needs – as explicitly outlined in the Ministry of Health guidelines (Direccion General de Servicios de Salud & Direccion de atencion integral a la mujer 1999) – there

are numerous obstacles to accessing appropriate care. To address this situation, the Central American Health Institute (ICAS) piloted a competitive[1] voucher programme aimed at increasing both the accessibility and quality of sexual and reproductive health (SRH) care for poor adolescents (Meuwissen *et al.* 2006a,b,c,d). The pilot programme was implemented in collaboration with the London School of Hygiene and Tropical Medicine, and financed by the British Department for International Development.

Conventional estimates of unmet needs for health care or contraceptives are based on interviews with women. However, a disadvantage of this approach is that the extent to which unmet needs could be met by the increased access to appropriate health care services remains unknown. The intervention described in this article succeeded in mobilizing adolescents from disadvantaged areas from Managua to attend health services. Evaluation showed that the use of SRH care among female adolescents increased considerably (adjusted odds ratio 3.1, 95% confidence interval 2.5–3.9) (Meuwissen *et al.* 2006c). As such, the intervention provides unique data to answer the question: What are the health care problems for which female adolescents consult a doctor if he/she is available, accessible and affordable? The information collected allows this question to be explored, taking into account the different characteristics of the girls (demographic, socioeconomic, knowledge and experience with contraceptives) and of the providers, as well as the factors associated with demand for contraceptives in sexually active teenagers. These results provide valuable input to the discussion of the public health relevance of interventions that aim to increase the access and quality of SRH care for underserved adolescents – a phenomenon common to many developing countries.

Methods

Design and population

The intervention took place in Managua, the capital of Nicaragua, one of the poorest countries of Latin America. Managua had an estimated population of about one million inhabitants in the year 2000, of whom 25% were aged between 10 and 20 years (Alcaldía de Managua 2000). Primary health care services in Managua consist of public health centres run by the Ministry of Health, municipal public health centres, private doctors and clinics run by non-governmental organizations (NGOs).

From September 2000 to July 2001, vouchers were distributed to 16 850 female and 11 861 male adolescents aged 12–20 in disadvantaged areas of Managua. The vouchers were distributed through ICAS, NGOs and participating clinics, at four markets, in clinics[2], outside 19 public schools and in 221 disadvantaged neighbourhoods (door-to-door) to each adolescent present at the time of distribution. Most of the vouchers (75%) were distributed by female adolescents contracted and trained by ICAS. The voucher distributors worked in small teams, accompanied by an ICAS staff member. At markets and in neighbourhoods, girls were approached individually. At schools, vouchers were distributed outside the compounds to groups of adolescents leaving the school to prevent compromising schools through direct association with an SRH care intervention (given that official regulations forbid sex education by health professionals in schools). The vouchers were given to all adolescents present at the time of distribution. The voucher receivers were a representative sample of the target group of the intervention (Meuwissen *et al.* 2006c).

Vouchers were not person bound and were valid for 3 months. They entitled the holder to a free-of-charge consultation and a follow-up visit for advice/counselling, contraception, treatment of STIs or reproductive tract infections (RTIs), pregnancy testing and/or antenatal care in any of the four public, five private and 10 NGO clinics, contracted by ICAS. Clinics were selected based on their suitability (preferably with some experiences in SRH-care) and proximity to the areas where vouchers were distributed. Identified clinics were invited to participate, and prices per consultation were negotiated based on their customary fees. The average price negotiated per consultation and follow-up visit was US$ 4.56. (The average normal consultation fee is US$ 5.93.)

The clinics received reimbursement for each adolescent consultation. Doctors at participating clinics were obliged to attend an introductory meeting describing the programme and its procedures. An information manual with background information and guidelines was also provided. Furthermore, clinic staffs were encouraged to attend a training course on SRH care for adolescents. During each consultation, doctors completed standardized clinical forms. Voucher redeemers received a booklet on adolescent health, two condoms with supportive information, and, if required, contraceptive methods, laboratory tests and syndromic treatment for STIs.

[1]The 'competitive' element is that the voucher is redeemable at multiple providers and that the user is free to make his/her choice (Gorter *et al.* 2003; Sandiford *et al.* 2005).

[2]The clinics had a stock of vouchers for additional consultations for voucher users in need of follow-up; for partners of patients with STIs and for friends of pregnant girls.

In total, 3301 (20%) of the vouchers distributed to girls were redeemed. This is a relatively high redemption rate, considering the limited period over which the vouchers were valid and that they were distributed without asking adolescents about their SRH-care needs. Earlier evaluation showed that 51% of girls who had had intercourse used their voucher, and 14% of girls who never had intercourse did. We also found that the increases in SRH-care use were much more pronounced among younger girls, girls still at school and girls with the lowest level of education, when voucher receivers were compared with girls who had not received a voucher (Meuwissen *et al.* 2006c).

Data collection and analysis

The clinical forms, completed for each adolescent redeeming a voucher, were composed of a general section comprising reason for consultation; age; educational level; daily activity; socioeconomic background; former use of health care services; knowledge of family planning methods; preferred method; and gynaeco-obstetric history including former and present use of contraceptives, sexual activity and need for contraception. After the general section, only those parts corresponding with the reason for the consultation were completed. Collecting information in a medical setting has the important advantage that many intimate questions, e.g. age at first intercourse, are considered routine. However, this was not true for all questions. Doctors appeared reluctant to ask whether the girl intended to become pregnant during the next 6 months, a question introduced later in the programme to better assess the need for contraception.

Once a week all clinics were visited, completed forms copied and the original forms were returned to the clinic. Two medical doctors from the project codified all copied information. Data were entered twice by different data clerks using Epi-info 6.04d (CDC, Atlanta, GA, USA). Stata 7.0 software (Stata Corporation, College Station, TX, USA) was used for further analysis.

First, characteristics of the girls and their use of SRH care in the last year were tabulated. All girls were asked about their former use of SRH care, because we wanted to assess which underserved groups of adolescents were reached through vouchers. A logistic regression model was constructed to analyse the influence of various independent variables on former health care use, corrected for the influence of other variables.

Previous research has suggested that adolescents have different needs depending on whether they had had intercourse and whether they have experienced any negative consequences, such as unwanted pregnancies or STIs (Hughes & McCauley 1998). As a result, we explored the reason for consultation with a voucher according to girls' sexual activity and category of childbearing. In addition, answers referring to knowledge of contraceptives, past and present contraceptive use and method of preference were tabulated according to the girls' experience.

We then constructed a logistic regression model to identify factors that were associated with the use or planned use of contraceptives among sexually active non-pregnant adolescents at the end of the consultation. Because characteristics of the provider could play an important role in the communication on contraceptive needs, a multi-level analysis was performed, accounting for dependence of the results within providers by robust estimation of the model variance clustered on provider. The Wald test ($P < 0.05$) was used to evaluate the strength of the association between the independent variables and the outcome. Only the variables significantly associated were retained in the model.

Results

In total, 3067 girls used 3301 vouchers [190 girls (6%) used more than one voucher for various episodes of 'illness']. Forty per cent of the girls came back for a follow-up visit. Most vouchers were redeemed in NGO clinics (2063, 62.5%), against 733 (22%) in private clinics and 505 (15%) in public clinics. Most girls (59%) were having a consultation with a young female doctor (aged less than 36). Twenty-two girls were more than 20 years old and were excluded from further analysis.

Records were generally well kept and most questions completed. Common medical questions had few missing values, while questions about former health care use or provider of contraceptives had not been answered on about 15% of forms.

Who uses the services?

In Table 1, an overview is given of the main characteristics of the girls who used their voucher. Nearly half of the girls who used the services were younger than 18 years. Only 21% of the girls were earning an income, 43.5% were studying and 42% stayed at home. Nearly all (86%) were sexually active and 28% were pregnant. Thirty-five per cent of the girls were already mothers (78% with one child, 19% with two and 3% with three or more, not shown in Table 1). Seven girls had given birth to twins and 63 girls reported that a child had passed away (not shown in Table 1).

The percentages using SRH care in the year before the voucher visit are shown in column 2 of Table 1. Less than 30% of the girls reported use of SRH services in the last year.

Table 1 Characteristics of the girls on their first visit with voucher and relation between characteristics and the use of services in the last year ($N = 2551$)

			Use of SRH care† last year		
Variables	Categories	All *N* (%)	% used	Adjusted odds ratio‡ (95% CI)	LRT§ *P*
Age group	11–15 years	501 (16.5)	12.4	1.0	
	16–17 years	968 (31.8)	25.8	1.1 (0.8–1.6)	
	18–20 years	1576 (51.8)	36.6	1.2 (0.9–1.8)	
Level of school attainment	0–6 years	922 (30.3)	31.5	1.0	
$M = 1$	7–9 years	1310 (43.0)	29.7	1.0 (0.8–1.3)	
	> 10 years	812 (26.7)	25.6	0.8 (0.6–1.0)	
Daily activity	Studying	1138 (37.4)	20.3	1.0	0.02
	Working	446 (14.7)	37.5	0.9 (0.6–1.2)	
	Working and studying	186 (6.1)	34.2	1.4 (0.9–2.1)	
	At home	1275 (41.9)	33.9	0.7 (0.6–1.0)	
Status of relationship	Single	1185 (38.9)	14.7	1.0	< 0.001
	Engaged	1425 (46.8)	37.6	1.7 (1.4–2.2)	
	Married	435 (14.3)	40.5	1.9 (1.4–2.7)	
Category of childbearing	Not yet had intercourse	431 (14.2)	1.4	1.0	< 0.001
	Sexually active (not pregnant/ mother)	923 (30.3)	25.0	17.7 (7.1–44.5)	
	First time pregnant	626 (20.6)	15.3	9.2 (3.6–23.8)	
	Mother and pregnant	232 (7.6)	40.6	32.1 (12.1–85.2)	
	Mother not pregnant	833 (27.4)	56.6	62.1 (24.2–159.3)	
Refrigerator	Not present	1759 (58.0)	30.3	1.0	
$M = 13$	Present	1273 (42.0)	27.5	1.0 (0.8–1.2)	
No of people/bedroom	0–2	1376 (45.6)	28.7	1.0	
$M = 26$	> 2–3	958 (31.7)	30.2	1.0 (0.8–1.2)	
	> 3+	685 (22.7)	28.4	1.0 (0.8–1.3)	
Total		3045 (100)	29.1		

LRT, likelihood ratio test; M, missing value.
†Reported use of SRH care in the last 12 months. $N = 2551$, as there are 467 missing values for this outcome, and a further 10 for refrigerator and 17 for no. of people/bedroom.
‡Results of logistic regression analysis with all tabulated variables included and exclusion of girls older than 20 years.
§Results of the LRT, only values with $P < 0.05$ are reported.

When all factors were considered simultaneously through logistic regression analysis, single girls and girls staying at home had made significantly less use of health services, whereas girls who were already mothers had made most frequent use. The profile of the girls using the vouchers was different. The vouchers succeeded in attracting different types of users to the clinics: 45% were neither pregnant nor mothers and 39% were single (Table 1).

What are the reasons for consulting a doctor?

In total, 5069 reasons for consultation were registered, on average 1.5 reasons per consultation. One third of the vouchers were used for contraceptives (34%), nearly one third (31%) for complaints related to an STI or RTI, 28% for advice/counselling, 28% for antenatal check-ups and 18% for pregnancy testing. In 10% of the consultations, vouchers were used exclusively for advice/counselling. In 50% of the consultations provided to sexually active girls who were neither pregnant nor mothers, contraceptives were requested and 39% of these girls presented with complaints of symptoms of either an STI or an RTI. Many had additional requests for advice or counselling (Table 2).

Of 1137 consultations for contraceptives, only 39% were used exclusively for this reason; in 27% also advice/ counselling was provided; 13% a pregnancy test (of which some were positive); 28% STI/RTI treatment and 8% advice on other complaints (not shown).

Some girls discussed problems related to sexual abuse with the doctor, and others referred to previous abuse when asked for the age at first intercourse. Forty-two (2%) girls had had intercourse before their first menstruation, some as young as 8 years and 146 (6%) in the year of their first menstruation.

Table 2 Reasons for using a voucher, for all medical consultations provided to girls and distributed over each childbearing category

		Reason for consultation in % per childbearing category†				
Problems identified	All $N = 3301$ (100%)	Not started‡ 441 (100%)	Started‡ 1001 (100%)	First pregnancy 673 (100%)	Pregnant and mother 249 (100%)	Mother not pregnant 937 (100%)
Advice/counselling	923 (28.0)	73.2	28.7	11.7	10.4	22.2
Contraceptives	1137 (34.4)	4.3	50.3	0.4	0.8	65.0
Pregnancy test	581 (17.6)	0.0	25.4	22.9	24.9	11.8
Antenatal care	922 (27.9)	0.0	0.0	100	100	0.0
STI/RTI	1023 (31.0)	10.2	38.9	20.1	29.3	40.7
Other reproductive health issues	347 (10.5)	22.7	11.5	3.6	1.6	11.1
Other health issues (gastritis, dermatitis, etc.)	136 (4.1)	14.7	3.6	0.4	0.8	3.2
Total reasons for consultations	5069	552	1585	1071	418	1443
Mean number of reasons per consultation	1.5	1.3	1.6	1.6	1.7	1.5

STI/RTI, sexually transmitted infections, reproductive tract infection.
†The percentages are calculated per childbearing category and girls could come for more than one reason.
‡Not started, not yet had intercourse; started, sexually active neither pregnant nor mother.

Table 3 Knowledge, past and present use of contraceptives, for all girls and for each childbearing category

		Started not				
Categories	All 3045‡ (100)	Not Started† ($N = 431$)	Pregnant or mother ($N = 923$)	First pregnancy ($N = 626$)	Pregnant and Mother ($N = 232$)	Mother not Pregnant ($N = 833$)
a.% Knows at least two MC§	1951 (74.5)	54.6	76.0	70.1	77.8	85.6
b. % Has a preferred MC	1728 (72.2)	39.0	76.9	63.9	78.6	88.9
b.1. % Condom	14.1	31.5	16.8	16.6	8.8	7.5
b.2. % Oral contraceptives	28.2	32.3	30.1	32.8	21.1	24.6
b.3. % Injectables	43.7	28.5	48.3	41.1	43.5	44.2
b.4. % Intra-uterine device	13.7	6.2	4.7	9.5	25.2	23.5
b.5. % Sterilization	0.5	1.5	0.2	0.3	1.4	0.4
c. % Has ever used MC	1492 (57.2)	na	50.9	32.0	67.2	80.4
c1. % Purchased at Health Centre¶	773 (60.1)	na	39.7	42.0	78.7	75.5
c2. % Purchased at Pharmacy¶	570 (44.3)	na	62.8	55.7	22.0	33.3
d. % Currently using MC	528 (18.9)	na	23.4	0.8	2.2	46.7
e. % Who requests a MC††	1012 (33.2)	4.2	49.1	0.5	0.9	64.3
e1. % First time users of MC‡‡	350 (34.6)	100	45.3	100	0	23.2
f. % Using MC consulting for other reason§§	225 (7.4)	na	7.7	0.8	1.7	17.4
g. % Uses/plans to use MC after consultation	1237 (41.6)	4.2	56.8	1.3	2.6	81.8

Missing values (mv) were for a., mv = 427; b., mv = 652; c., mv = 5; d., mv = 251; c1., mv = 206; c2., mv = 206; e., mv = 0; f., mv = 0; g., mv = 2.
MC, modern contraceptives (hormonal contraceptives, oral or injectables, intra-uterine device, condoms, male or female sterilisation)
†Not started, not started having sexual relations.
‡Based on the 3045 first visits of girls younger than 21 years.
§Only MC are accounted for. Natural methods require discipline and teamwork within the couple and have a much higher failure rate. If one seriously wants to help adolescent girls to avert unwanted pregnancies, MC methods are the only methods that should be recommended by the health services for girls in this phase of life (Ranjit *et al.* 2001; Che *et al.* 2004; Ali & Cleland 2005).
¶Denominator is the number of girls (N for entire group is 1492) with experience in using modern methods (girls under c).
††Includes current and new users requesting MC. It also includes five girls who requested contraceptives but had a positive pregnancy test.
‡‡The denominator is the number of girls using or wanting to use a MC (girls under e).
§§Seventy-four of these girls were using permanent methods like IUD or sterilization. Nine girls reported using MC but were nevertheless pregnant.

What is their knowledge of, experience with and demand for contraceptives?

In Table 3, details are tabulated on voucher users' knowledge of, experience with and demand for contraceptive methods according to the category of childbearing experience. Some interesting findings surface

- Nearly half of the sexually active girls who were neither pregnant nor mothers had never used contraceptives. Of the girls who were pregnant for the first time only 32% reported having ever used contraceptives.
- The *current* use of contraceptives among sexually active girls who were neither pregnant nor mothers was only 24%. This percentage was strongly influenced by their civil state. The lowest use was seen among the singles (20%) and the highest among the married (34%). Among the girls who were already mothers, the use of contraceptives was higher (47%) and their civil state had no influence on their use (data not shown).
- The health services were the most common supplier of contraceptives among girls who were already mothers (75.5%), while the pharmacy was more common among sexually active girls not yet mothers (63%).
- Fifty-seven of the sexually active girls who were neither pregnant nor mothers and 82% of the non-pregnant mothers were using or requested a modern contraceptive method. Of those already using a modern method, 8% and 17% consulted for another reason, respectively.
- Twenty-three per cent of the mothers who requested modern contraceptives had never used them before.
- Four per cent who had not yet started sexual activity visited the doctor to request contraceptives to be protected at their sexual debut.
- An overall result was that the intended use of contraceptives doubled among the sexually active non-pregnant voucher redeemers (from 24% to 57% among the girls not yet mothers and from 47% to 82% among the mothers, Table 3). Sixty-nine per cent of the sexually active girls left with a contraceptive method.

Because of the late introduction of the question and the many missing values, only 510 sexually active non-pregnant girls were asked whether they intended to become pregnant in the next 12 months. Of these girls, 468 (92%) answered no, but, in fact, 77 (16.5%) were already pregnant.

The type of contraceptive method (oral, injectables, IUD, condoms) prescribed was in half the cases similar to the method indicated by the girls as their preferred type of method. The contraceptive methods most frequently prescribed were monthly injectables (Mesigyna®[3], Schering, Berlin, Germany) (39%) and oral contraceptives (38.5%). Condoms were used by 8%. Of 528 girls who reported using contraceptives before redeeming their voucher, 141 (27%) consulted whether to change the type of method (not taking into account changes in kind of hormonal methods).

Overall, 5.5% of the girls who requested contraceptives left the clinic with no contraceptive method. This percentage ranged from 0% to 11% across different doctors, with younger female doctors (< 36 years) and older male doctors (> 35 years) having the lowest percentages (not shown). Some of the girls were instructed to come back on the first day of their menstruation. In other cases, no remarks were written down, which could explain the reason.

Who wants contraceptives?

Sixty-two per cent of the sexually active non-pregnant girls were currently using or requested contraceptives (Table 4). This percentage ranged from 43% to 96% according to which of the doctors was consulted (not shown). A multilevel logistic regression model was constructed to analyse which factors were associated with the actual or planned contraceptive use. Studying and having children were associated with a significantly higher use, and knowing two methods was associated with a nearly significant higher use. Girls assisted by young female doctors more frequently had contraceptives prescribed than those who were attended by female doctors older than 35 years or by male doctors younger than 35 years of age. Girls' age group, status of relationship and having a preferred method were only significantly associated with the outcome in bivariate analysis (Table 4).

Discussion

Female adolescents presented SRH problems that merited medical attention. The mean number of problems presented was 1.5 per consultation. One third of the vouchers were used to obtain contraceptives and nearly one third for STI/RTI treatment. A new category of health care users emerged: girls who were sexually active and not yet mothers or pregnant and who consulted for contraceptives

[3]Mesigyna is a monthly injectable hormonal contraceptive available in Latin America. This type of method has several advantages for adolescents: it does not require continuous application; its coitus independent; it is highly effective and reversible; and it does not require the user to keep supplies, and, therefore, its use can be concealed (Singh 1995).

Table 4 Girl and provider-related factors related to the use or planned use of contraceptives among sexually active girls who are not pregnant

Variables All	Category	*N*† 1456	% Uses MC‡ 906 (62.2)	Adjusted odds ratio§ (95% CI)
Knows two MC methods	No	281	52.0	1.00
	Yes	1175	64.7	1.40 (0.97–2.01)
Daily activity	Studying	507	60.2	1.00
	Working	237	60.3	0.65 (0.49–0.86)
	Working and studying	109	55.0	0.85 (0.55–1.32)
	At home	603	66.0	0.80 (0.57–1.14)
No. of children	0	778	51.0	1.00
	1	526	73.8	2.94 (2.18–3.95)
	2 or more	152	79.6	4.24 (2.83–6.38)
Gender/age of the doctor	Female doctors $\leqslant$ 35 years	821	67.4	1.00
	Female doctors > 35 years	271	52.0	0.51 (0.30–0.88)
	Male doctors $\leqslant$ 35 years	73	56.2	0.62 (0.44–0.89)
	Male doctors > 35 years	291	58.8	0.73 (0.42–1.28)

MC, modern contraceptives (hormonal contraceptives, oral or injectables, intra-uterine devise, condoms, sterilisation).
†$N = 1456$: missing values (MV) = 300: for 'knows two modern methods' MV = 258; for 'no. of children' MV = 14; for 'gender/age doctor' MV = 28 (because some girls were seen by a nurse or a counsellor and not a doctor and therefore excluded from the analysis). There were significantly more missing values on ''knowing two methods'' among girls who did not use or request modern contraceptives. However, the direction of the associations was similar among these records.
‡% uses MC is the percentage of sexually active girls who are not pregnant and who were already using modern contraceptives together with the girls who requested modern contraceptives during their consultation.
§Results of reduced logistic regression analysis with clustering per doctor. Only factors significantly associated with the outcome are included in the model. Other factors tested for, but which were not significantly associated with the outcome were educational attainments; age group; status of relationship; the socioeconomic indicators: number of people per bedroom and presence of a refrigerator; type of clinic (public, private, NGO); having a preferred method. When the 225 girls who reported using contraceptives but did not use their voucher for that reason were excluded from the analysis, the association of daily activity, no. of children and of the age–gender group of the doctor with the use of contraceptives remained the same (not shown).

or STI/RTIs. Consultation with a female doctor younger than 36 years was associated with a higher chance of having contraceptives prescribed.

Which girls were served?

The most pertinent methodological question is who are the girls using the vouchers and can similar results be achieved in other populations? By using different voucher distribution strategies in low-income areas of Managua, a serious effort was made to reach major subgroups of poor adolescents. Earlier evaluation of the programme showed that representative samples were reached from the population that was targeted by the various distribution strategies (Meuwissen *et al.* 2006c). A previous finding that girls who were neither pregnant nor mothers profited most from the increased access to care provided by the programme (Meuwissen *et al.* 2006c) is confirmed by the present study. These girls have also been identified as the group facing the greatest obstacles to SRH care in other Latin American countries (Senderowitz 1997; Pons 1999; Langer 2002). It is likely that the needs for SRH care, as identified in this study, are similar to those in other Latin American countries.

Relevance

Before the start of the programme, sceptical observers expressed concerns that the health care services would be deluged by unnecessary demands. However, reviewing the reasons for attending shows the contrary. The group that used the voucher presented problems that merited medical attention. While girls who have not yet started sexual intercourse may seem the least important group to mobilize to the health services, health care services could well be the only place where Nicaraguan adolescents can obtain reliable information on SRH issues. In addition, access to contraceptive advice and methods for this group of adolescents is crucial to break the pattern of mostly unprotected sexual debut (Zelaya *et al.* 1996; Berglund *et al.* 1997; Rani *et al.* 2003).

Based on the data from the evaluation study, where SRH care use by voucher receivers was compared with use by girls who had not received a voucher, we can estimate the

frequency of consultation in the absence of the voucher programme. Of the girls who not yet had intercourse, only one third would have attended, and of the girls who were sexually active but neither pregnant nor mothers, only half would have attended. However, of the girls who were pregnant or mothers, three quarters would have sought SRH care. Previous research suggests that the confidential and free-of-charge access offered by the voucher programme played a central role in mobilizing the first two groups of girls to SRH care (Meuwissen *et al.* 2006d).

Strategies to increase contraceptive prevalence among adolescents often focus on reaching out to new users. However, responding to dissatisfaction with the current contraceptive method might be a strategy of equal importance. More than half (57%) of the girls had experience with using contraceptives, while only 19% were current users. This is a strong illustration of the high discontinuity in contraceptive use among adolescents (Blanc & Way 1998; Ali & Cleland 2005). Furthermore, at least one quarter of current users appeared dissatisfied with the current method and wanted to change. These findings reinforce the need for interventions focussing on achieving continuity in contraceptive use in parallel to the interventions to reach out to new users.

One third of the girls came for STI/RTI treatment. Correct treatment is important, not only because of the direct consequences of inappropriate or no treatment, such as infertility, but also because STIs enhance the transmission of HIV by increasing the infectiousness of HIV-positive individuals and/or the susceptibility of HIV-negative individuals (Baeten & Overbaugh 2003; Buchacz *et al.* 2004; Sexton *et al.* 2005). Adolescents are a widely recognized group at risk of HIV infection and syndromic treatment of STIs and condom promotion through health facilities have proved to be effective strategies to diminish risks among adolescents (UNAIDS Inter-Agency Task Team on Young People 2004). The main problem policy makers face is how to reach these groups. The high percentage of female voucher receivers who consulted for STIs/RTIs suggests that vouchers for reproductive health were very effective in mobilizing adolescents for STI treatment for themselves and their partners. A similar success was reached among male voucher receivers (Gorter 2002).

One third of the girls came for antenatal control. Adolescent pregnancy in Nicaragua is widespread and is associated with elevated maternal morbidity and mortality (Mayor 2004; Conde-Agudelo *et al.* 2005). Adolescents often obtain antenatal control only very late in their pregnancy and 15% receive no antenatal control at all (INEC Instituto Nacional de Estadística y Censos & Ministerio de Salud 2001). Early detection of pregnancies at risk is an important strategy for reducing these risks.

Adequate care

The results of this study reinforce that doctors need many skills to adequately address the SRH-care needs of adolescents. In Nicaragua, dealing with adolescents involves a group who are generally very poorly informed about their own bodies and about issues related to sexual health and prevention of pregnancy. It also involves dealing with wanted as well as unwanted pregnancies; with wanted and unwanted sexual intercourse; with safe and unsafe sexual practices and with substantial social pressure in a society with marked gender imbalances, particularly surrounding sexuality and contraceptive use.

If unmet needs for contraception among sexually active teenagers are to be addressed, access to 'adolescent friendly' SRH care seems crucial. Isolation of family planning from SRH care – by over-the-counter selling of contraceptives or community distribution of contraceptives – does not seem appropriate in view of the high prevalence of STIs/RTIs, the need for information and the seriousness of the other problems in this age group.

Furthermore, the results of this study do not support the idea that it would be appropriate to differentiate levels of care according to criteria such as 'having/not having had intercourse' and 'having/not having experienced problems' (Hughes & McCauley 1998). These selection criteria seem impractical because of their intimate and delicate character, and are questionable because of the seriousness of the problems faced by adolescents. Our experiences rather underscore the importance of establishing easy, quick and free-of-charge referral links to higher levels of psychological or medical care to support the primary health care providers.

Dealing with adolescents is not the same as dealing with adults and requires a high level of sensitivity. The indicator 'percentage sexually active, not pregnant adolescents who request contraceptives' can provide a quick estimation of doctors' alertness in using a consultation to support adolescents in protecting themselves from unwanted/untimely pregnancy. The results revealed considerable differences between providers with the outcome 'use or planned use of contraceptives' varying between 43% and 96%. The crucial role of the provider is further demonstrated by differences in the percentages of adolescents who leave the doctor with a method after requesting a contraceptive. The result that younger female doctors were most supportive in these aspects confirms the findings of previous studies (Hippisley-Cox *et al.* 2000). The most probable explanation for this phenomenon is that it is easier for a young female doctor to ask for the risks a young woman carries, and easier for a young women to admit the risks and to ask for contraceptives when communicating with a young female doctor.

In conclusion, the results of this study give an important input into the debate about the relevance of free-of-charge, easy and confidential access to primary health care to meet the needs for SRH care among poor adolescents. The groups most left out by current practices are younger adolescents, those who are single and those who are not yet mothers. These girls are at high risk of serious health threats such as STIs and HIV, and unwanted or untimely teenage pregnancies that could – to a large extent – be prevented, and for which they appear willing to seek medical care. Policies that promote and enable the accessibility and availability of appropriate health service have the potential to make an important contribution to reduce these SRH risks among the underserved adolescents.

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Corresponding Author **Liesbeth Meuwissen**, Krozengaarde 11, 3992 JP Houten, the Netherlands. Tel.: +31 30 2729842; Fax: +31 30 2729729; E-mail: Liesbethmeuwissen@yahoo.com

Découverte et réponse aux besoins des soins de santé sexuelle et reproductive chez les adolescentes urbaines pauvres au Nicaragua

DONNÉES DE BASE Afin de répondre aux besoins des adolescentes dans les zones urbaines paubres pour les soins de santé sexuelle et reproductive (SSSR), des bons donnant droit à l'accès gratuit aux soins de santé reproductive dans 19 cliniques de santé primaire ont été distribués à Managua au Nicaragua. Ces bons ont substantiellement accru l'usage de ces services, démontrant ainsi que beaucoup d'adolescentes étaient disposées à utiliser ces services s'ils étaient plus accessibles. Le système des bons pour soins gratuits a permis d'identifier la nature des besoins existants mais non assurés pour les SSSR.

MÉTHODE Les dossiers médicaux de 3301 consultations d'adolescentes ont été analysés en utilisant des méthodes statistiques descriptives et des régressions logistiques multiples.

RÉSULTATS Les adolescentes présentaient des problèmes SSSR méritant une attention médicale. La fréquence moyenne des problèmes était de 1,5 par consultation: 34% des bons ont été utilisés pour des contraceptifs, 31% pour des infections sexuellement transmissibles (IST) ou des infections du tractus reproducteur (ITR), 28% pour des consultations/conseils, 28% pour des contrôles anténataux et 18% pour des tests de grossesse. Une nouvelle catégorie d'utilisatrices des soins de santé a ainsi émergé: celle de filles sexuellement actives, n'étant ni enceintes ni mères, à la recherche de contraceptifs ou de traitement pour des IST/ITR. L'usage de contraceptifs a doublé chez celles sexuellement actives, non enceintes qui ont fait usage des bons gratuits. La consultation menée par un médecin féminin de moins de 36 ans était associée avec une chance plus élevée de voir prescrire un contraceptif.

CONCLUSION Des SSSR appropriés et accessibles peuvent contribuer de façon importante à l'augmentation de l'utilisation de contraceptifs, à la réduction du nombre de grossesses indésirées et à la réduction de la prévalence des IST/ITR chez les adolescentes les moins prises en charge. Lorsque les adolescentes ont accès aux services, le rôle crucial des agents de la santé est de veiller à ce que les besoins actuels et continus soient assurés.

mots clés Adolescents, Nicaragua, soin de santé sexuelle et reproductive, besoins non assurés, Programme Voucher, Access aux soins

Desvelando y respondiendo a las necesidades de salud sexual y reproductiva de mujeres adolescentes, urbanas, y de bajos recursos, en Nicaragua

ANTECEDENTES Con el fin de responder a las necesidades de atención en salud sexual reproductiva (SSR) de mujeres adolescentes, provenientes de áreas urbanas de povres, se distribuyeron bono para recibir atención gratis en SSR en 19 centros de atención primaria en Managua, Nicaragua. Estos bonos aumentaron sustancialmente el uso de los servicios, demostrando que muchas adolescentes están dispuestas a utilizarlos si son asequibles. El reembolso de los bonos hizo posible que se identificaran las necesidades existentes, y en gran parte no solventadas, de atención y cuidados en SSR.

MÉTODO Se analizaron las historias clínicas de 3301 de mujeres adolescentes que asistieron a la consulta de SSR utilizando métodos estadísticos descriptivos y regresión logística múltiple.

RESULTADOS Las adolescentes presentaban problemas de SSR que requerían atención médica. La media era de 1.5 problemas por consulta: 34% de los cupones se utilizaron para obtener anticonceptivos, 31% por quejas relacionadas con infecciones de transmisión sexual (ITS) o infecciones del tracto reproductivo (ITR), 28% para pedir consejo, 28% para control antenatal y 18% para prueba de embarazo. Emergió una nueva categoría de usuario de atención sanitaria: jóvenes sexualmente activas que no son ni madres ni están embarazadas, que buscan métodos anticonceptivos o tratamiento para ITS/ITR. El uso de anticonceptivos se dobló entre las jóvenes sexualmente activas no embarazadas. El ser atendido por una doctora menor de 36 años estaba asociado con una mayor probabilidad de recibir una prescripción de anticonceptivos.

CONCLUSIÓN Una atención en SSR asequible y apropiada tiene el potencial de contribuir de forma importante a aumentar el uso de anticonceptivos y disminuir tanto el riesgo de embarazos no deseados entre adolescentes como la prevalencia de ITS/ITR entre las mismas. Una vez que las adolescentes han accedido a los servicios, los proveedores tienen un papel crucial en asegurar que sus necesidades actuales y futuras son satisfechas.

palabras clave adolescentes, nicaragua, salud sexual y reproductiva, necesidades insatisfechas, programa de cupones, acceso a atención sanitaria

