

Female youth health promotion model in primary health care: a community-based study in rural Upper Egypt

A. El Nouman,¹ D. El Derwi,¹ R. Abdel Hai¹ and H. Abou Zeina¹

نموذج تعزيز صحة الفتيات في الرعاية الصحية الأولية: دراسة مجتمعية في أرياف صعيد مصر
عزة النعمان، دعاء الدروي، رحاب عبد الحي، هناء أبو زينة

الخلاصة: تعد الأوضاع الصحية للفتيات المحرومات إحدى الشواغل العالمية. وقد أجرت الباحثات هذه الدراسة في صعيد مصر بأسلوب متكامل لإعداد نموذج لخدمات تعزيز الرعاية الصحية الأولية للفتيات. وقد تعرفت الباحثات على المشكلات الصحية لعينة تتألف من 671 شابة، تتراوح أعمارهن بين 12 - 20 عاماً، وينتمين إلى قرية واحدة، واستخدمت الباحثات لذلك مسحاً مبدئياً للسكان، مع مناقشات للمجموعات البؤرية. وتضمنت التدخلات دورات تدريبية للقائمين على إيتاء الرعاية الصحية حول المواضيع الصحية ذات الصلة، وحول مهارات التفاعل بين الزبون ومقدم الخدمة، واستنهاض المجتمع والسلطة المحلية، وحصصاً من التثقيف الصحي، إلى جانب نظام تسجيل خاص للنساء. وقد لاحظت الباحثات ازدياداً في استخدام الفتيات لخدمات الرعاية الأولية.

ABSTRACT The health status of underprivileged young females is a global concern. This intervention study in rural Upper Egypt used an integrated approach to develop a model for primary care health promotion services to female adolescents. An initial household survey and focus group discussions identified the health problems of a sample of 671 adolescent women aged 12–20 years recruited from one village. Interventions included training courses for health care providers on relevant health topics and on client–provider interaction skills; community and local authority mobilization; and health education sessions and a special record system for the women. An increase was seen in the utilization of primary care services.

Modèle de promotion de la santé des jeunes filles au niveau des soins de santé primaires : étude communautaire dans les zones rurales de Haute-Égypte

RÉSUMÉ L'état de santé des jeunes femmes défavorisées est une question d'intérêt mondial. Cette étude d'intervention réalisée dans les zones rurales de Haute-Égypte a utilisé une approche intégrée pour élaborer un modèle de services de promotion des soins de santé primaires pour les adolescentes. Une enquête initiale auprès des ménages et des groupes de discussion ont permis de recenser les problèmes de santé d'un échantillon de 671 adolescentes âgées de 12 à 20 ans et sélectionnées dans un village. Les interventions comprenaient des formations destinées aux prestataires de soins et portant sur des thèmes de santé pertinents et sur les compétences en matière de rapports entre patients et prestataires ; la mobilisation de la population et des autorités locales ; des séances d'éducation sanitaire et un système d'enregistrement spécial pour les femmes. On a observé un accroissement de l'utilisation des services de soins primaires par ces jeunes femmes.

¹Department of Public Health and Community Medicine, Faculty of Medicine, University of Cairo, Cairo, Egypt (Correspondence to R. Abdel Hai: rehababdelhai@yahoo.com).

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Introduction

Although adolescent women in rural areas of developing countries are an especially vulnerable group in terms of health, social and economic problems, they usually lack access to appropriate health services. Promoting the health of adolescent women can optimize scarce resources and prevent negative health outcomes [1]. In Egypt, young adolescent females constitute a sizeable sector of the population (12.5%, i.e. around 8.75 million) [2], most of whom need greater care and protection.

Health promotion is defined as the process of enabling people to increase control over and improve their health. Its ultimate goal is to enhance individual and social well-being through recognizing their abilities to be free of disease, adopt healthy lifestyles, and live in a safe, healthy and supportive society/environment [3]. Primary health care (PHC) services have unique advantages of access, trust and credibility and provide an opportunity for building health gain into existing services [4,5]. In Egypt, PHC has long been driven by a medical, rather than a social, model of health, evaluated in terms of reduced morbidity and mortality, rather than health gain [6]. However, recent policy emphasis has been on developing more planned and proactive health promotion activities. Such policies are challenged by the existing barriers to health promotion that arise from the health system, sociocultural environment and traditional physician practice styles [7]. Recently, there has been an international surge of interest in health-related small area studies, using a multi-faceted approach to tackle the inter-relationship between deprivation and health care utilization [8].

This study was undertaken to develop a model for PHC health promotion services to adolescent women in rural upper Egypt. The aims and objectives of the first phase were

to identify and prioritize the main health problems of a sample of adolescent women; explore their perceptions of critical health issues; and define the main constraints facing the staff of rural primary health centres (RHCs) in delivering appropriate health promotion services. In the intervention phase the aims were to improve the performance of health care providers through training based on the needs assessment; mobilize the local community and authorities; develop a follow-up patient-held record system; and raise the awareness of adolescent women about various health topics.

Methods

We employed an interventional design with a pre- and post-intervention assessment. The study was carried out from 1 May 2005 to 27 April 2006 in one PHC centre in rural upper Egypt. Konayessa RHC in the south of Giza governorate met the selection criteria: a well-defined catchment area, relatively far from other PHC facilities, easily accessible to researchers and cooperative staff. It serves only one village with an estimated mid-year population of 37 840 in the year 2004, of which 2348 were young women in the target age group.

Identifying and characterizing the target group

The target group of adolescent women for the survey were selected randomly and their initial characteristics were defined using an interview-based household survey.

The study area was divided into 4 clusters using 2 landmarks; the water channel and the main road. Within each cluster, houses were selected using a systematic random technique where each 3rd house was included in the study. Females aged 12–20 years who agreed to participate were

included irrespective of their educational level, marital status or socioeconomic level. A total of 704 women were approached, but only 671 participated in the study, giving a response rate of 95.3%.

The participating women were interviewed using a pre-tested structured questionnaire that took about 20 minutes to complete. Data about basic personal characteristics, reproductive status, utilization of different health facilities, health perceptions, as well as known chronic health problems or complaints were collected. A social score for each woman was assigned based on parents' level of education and occupation and classified into 3 levels: low (< 8); intermediate (8–18); or high (19–28) [9].

Pre-intervention identification of health issues

The pre-intervention phase aimed at diagnosing and analysing the gap between the current health status of the target group of adolescents and the desired situation, i.e. to be at least equivalent to national figures [10,11]. Quantitative and qualitative techniques were used to collect the data. All data collection tools were pre-tested for acceptability and clarity before commencing the practical phases.

Clinical examination of young women

The adolescent women were given a comprehensive clinical examination (gynaecological examination was done only for married women). Body weight and height were measured to assess underweight and overweight using Centers for Disease Control criteria [12]. Blood pressure was measured and classified into 3 categories based on percentile values of mean systolic and diastolic BP: normal (< 90th percentile for age and sex); high normal (90th–95th percentile); hypertension (\geq 95th percentile) [13]. Haemoglobin level was measured

using the cyanomethaemoglobin calorimetric method and iron-deficiency anaemia defined as haemoglobin level < 12 g/dL [14]. Other tests included random blood sugar level for diabetes and urine and stool examination for parasitic infections.

Focus group discussions with young women

Focus group discussions (FGDs) were carried out with the women to explore their perceptions of 4 critical health issues in an attempt to pinpoint areas most needed to be addressed: reproductive health; healthy nutrition; breastfeeding; and prevention of common infectious diseases. A total of 12 FGDs were conducted; for each topic, FGDs were conducted in 3 separate age groups (12–15 years, 16–18 years and 19–20 years) with 10–12 participants in each session.

Interviews with health care providers

In-depth interviews and/or FGDs were carried out with the RHC health care providers. They comprised: senior medical staff ($n = 6$), junior physicians ($n = 4$), social workers ($n = 5$), nurses ($n = 13$) and laboratory technicians ($n = 3$), plus those responsible for various health programmes at the district level, e.g. family planning, health education, acute respiratory infections (4 managers and 4 staff). A semi-structured format with open-ended questions was used. The main focus of discussions was the constraints facing the RHC team in reaching its full potential as a female, youth-friendly, health-promoting setting, and related suggestions for achieving this.

Knowledge and performance assessment of the health care providers

A pre-training assessment was made of the health care providers (10 physicians and 13 nurses) using a self-administered questionnaire recording knowledge about

the 4 priority health issues. The questionnaire was developed by researchers based on a previous study [15]. Each topic contained 12 items, scored as 0 (incorrect) or 1 (correct). The health care providers were also assessed on their performance using a specially-designed observational checklist of 11 client-provider interaction (CPI) skills. Each provider was observed during encounters with 10 patients and each item on the checklist was given a score of 0 (if not performed) or 1 (if performed). For each of the 10 encounters for each provider a total score was calculated (sum of scores on each item), then a mean score was calculated for the health care providers on each topic. The same was done for the CPI.

Health system review of the RHC

Observations were made of the general system of work in the RHC and daily organization of different activities, including a review of the health system records. These observations were conducted as informal meetings with the staff to review the overall system performance and to check for problems that could occur during implementation of the intervention.

Interventions

Interventions were implemented at 3 levels. At the community level the intervention aimed at achieving policy level changes that would enhance the available resources at the RHC as well as achieve an effect on the families in the community. Community and local authority mobilization meetings were conducted with the district authorities and parliamentarians representing the study area to orient them about the study and to gain their support. A meeting was also held with influential community leaders to mobilize community participation and resources towards motivating the young women and their caretakers to attend the RHC to uti-

lize the health promotion services. The research team also contacted personnel from pharmaceutical companies to donate free samples, supplies and equipment (e.g. sphygmomanometers, gynaecological instruments) for the RHC.

At the RHC level the aim was to overcome barriers to the process of delivery of health promotion services to adolescent women. This was realized in 2 ways: first, with training courses for the health care providers over 3 days, addressing the 4 priority topics raised during the initial assessment; second, with frequent on-the-job training, constructive supervision and refresher training meetings of the trained health care providers by the research team. There were 3 meetings in the first month that followed the formal training sessions, and 1 monthly meeting during the following 5 months.

At the client level, the interventions included health education sessions and the introduction of a special patient-held record card. A total of 12 health education sessions were held with a subgroup of the targeted adolescent women ($n = 168$) who were randomly invited by social workers to attend the RHC. The aim of these sessions was to trigger the utilization of the health promotion services and to create a bond with the RHC. The 4 priority health issues were addressed in accordance with findings from the FGDs. Health education messages were targeted to different age groups (12–15 years, 16–18 and 19–20 years) and different health education materials were used, including posters, flip charts and video films. Health care providers and district staff participated in providing some of these sessions, together with the research team.

Each of the participating women was given a card during the first household visit, which included personal data and a log to record the date and purpose of each visit to the RHC. The patient card system was used

for documenting the plan of health education sessions to be attended by each woman and the particular counselling required, with a brief explanation of their priority.

Post-intervention monitoring and evaluation

The interventions were monitored and evaluated in the following ways.

A weekly visit was made over 6 months to the RHC to monitor performance and give supportive supervision to the health care providers. The pre-training assessment of health care providers' knowledge and performance was repeated with an initial and a 6-month post-training assessment to detect the degree of retention of training content and to what extent it was applied and sustained. FGDs were also carried out with the health care providers ($n = 6$) and district managers ($n = 4$) to assess their perspectives concerning the interventions that had been introduced.

FGDs were carried out with a sub-sample of the targeted adolescent women ($n = 27$) to assess their perspectives concerning the health promotion services provided at the RHC. Using the log cards an analysis was made of the frequency and purpose of visits of the targeted females to the RHC.

Ethical considerations

The required administrative regulations were fulfilled. Influential community leaders were informed about the objectives and phases of the study from the beginning to solicit their co-operation. Written consent was obtained from the participants themselves or from the caretakers of participants aged < 18 years. Confidentiality was assured throughout.

Data analysis

SPSS, version 11 was used for data entry and analysis. Simple frequencies, 1-way

ANOVA, and *post-hoc* tests of significance were used as required. A P value < 0.05 was considered significant.

Results

General and reproductive features of the adolescent women

The basic sociodemographic and reproductive characteristics of the sample of adolescent women are shown in Tables 1 and 2 respectively. Mean age was 17.2 [standard deviation (SD) 2.6] years. Among the married women ($n = 342$) the mean age at marriage was 16.5 (SD 1.7) years. About two-thirds of the participants (60.1%) were classified as low social status. The major-

Table 1 Selected sociodemographic characteristics of the adolescent women participants

Characteristic	No. ($n = 671$)	%
<i>Age (years)</i>		
12–15	181	27.0
16–18	233	34.7
19–20	257	38.3
<i>Education status</i>		
Never enrolled	139	20.7
Dropped out	358	53.3
Currently enrolled	174	26.0
<i>Education level</i>		
Illiterate	231	34.4
Read & write	266	39.6
Basic level	129	19.3
Secondary +	45	6.7
<i>Marital status</i>		
Married	342	50.9
Single	329	49.1
<i>Social status</i>		
Low	403	60.1
Intermediate	227	33.9
High	41	6.0

Table 2 Reproductive status of the married adolescent women participants

Item	No. (n = 342)	%
<i>Age at marriage (years)</i>		
≤ 16	141	41.2
16+	201	58.8
<i>Ever use of family planning methods</i>		
Yes	218	63.6
No	124	36.4
<i>No. of pregnancies</i>		
1	143	41.8
2	122	35.7
3+	20	5.8
0	57	16.7
<i>Problems at pregnancy^a</i>		
Yes	89	31.2
No	196	68.8
<i>Postnatal problems^a</i>		
Yes	18	6.3
No	267	93.7
<i>Breastfeeding problems^b</i>		
Yes	72	26.6
No	199	73.4

^aIncludes only women who ever got pregnant (n = 285);

^bIncludes only women who breastfed (n = 271).

ity of the married women reported becoming pregnant within 1 year after marriage (78.6%, n = 269). Only about one-quarter of the participants (26.0%) were currently enrolled in school and 74.0% had dropped out or never attended school due to “financial reasons” (40.4%), “getting married” (17.5%) or “father’s will” (35.7%).

Health and health care problems of the adolescent women

Interviews revealed that 85.2% of the adolescent women perceived their health as “normal”, while only 13.0% perceived it as “poor”, and 1.8% as “excellent”. In case of illness, 45.6% sought medical advice from a physician, while 48.4% occasionally did

so and 6.0% reported never seeking a physician’s medical advice (instead consulting a pharmacist or self-medicating). Table 3 shows the women’s utilization patterns of health facilities on different occasions before the intervention. Of those who had been pregnant, 12.6% had never attended for antenatal care and 31.2% had had problems during pregnancy.

The household survey revealed that only 57.9% of interviewed women were able to purchase prescribed medications from dispensaries outside the RHC; others

Table 3 Health facilities commonly utilized by adolescent women participants (n = 671) pre-training

Purpose/type of health facility attended	No. of women	%
<i>Curative care</i>		
Primary health centre	483	72.0
Private clinic	63	9.4
General hospital	49	7.3
Health insurance	36	5.3
None	40	6.0
<i>Antenatal care^a</i>		
Primary health centre	195	68.4
Private clinic	31	10.9
General hospital	23	8.1
None	36	12.6
<i>Natal care^a</i>		
Primary health centre	2	0.7
Private clinic	33	11.6
General hospital	200	70.2
None (home birth)	50	17.5
<i>Postnatal care^a</i>		
Primary health centre	18	6.3
Private clinic	15	5.3
Home	2	0.7
None	250	87.7
<i>Family planning services^b</i>		
Primary health centre	177	51.8
Private clinic	41	11.9
General hospital	0	0.0
None	124	36.3

^aIncludes only women who ever got pregnant (n = 285);

^bincludes all married women (n = 342).

mentioned taking aspirin instead (28.2%), "getting cheaper alternatives" (13.3%) or using traditional remedies (0.6%).

The clinical examination and laboratory investigations revealed that the main health problem was iron-deficiency anaemia with a prevalence of 67.4%, followed by parasitic infestation (31.1%), overweight (7.3%), hypertension (4.9%), underweight (3.5%) and diabetes (1.6%). Of the 342 married women who had gynaecological examination, 41 (12.0%) had genital tract problems, including vulvular and vaginal lesions (6 cases), cervical erosion and ectopy (15 cases) and adnexal tenderness (12 cases). Almost one-third of all married females (31.0%) were found to have abnormal vaginal discharge of which they were unaware.

During FGDs the women complained about: the unavailability of afternoon working hours at the RHC; the drug supply shortage at the RHC dispensary; and that some health care providers did not give enough time to answer their questions about health conditions. Women perceived their medical conditions as either being "unworthy of medical attention", "too costly to address" or as a "part of their burden in life", about which they cannot or should not complain

Health promotion delivery barriers as perceived by RHC health care providers

In-depth interviews and/or FGDs with the health care providers about barriers to health promotion services for adolescent women by the RHC revealed the following issues: uncertainty and confusion about what promotive interventions to select and how frequently to offer them; inadequate resources for the interventions and lack of time required to deliver them; insufficient clinician knowledge about the importance of health promotion services and how best to deliver them; lack of understanding of

women's health issues and confusion from conflicting information in the media; and lack of PHC systems to integrate these services into routine patient care.

Evaluating the interventions

A number of positive effects were observed at all the 3 levels after the intervention.

At the community level

Positive responses were evident in a community that had a history of challenges in attempting community collaboration, e.g. paving the main roads connecting the RHC within the core of the catchment area. A colour television, video, seats and an array of health education materials were offered for the recently established health education room at the RHC. Additionally, equipment for family planning services and free medication to the RHC dispensary were offered.

At the RHC level

The mean baseline scores of health care providers' knowledge of nutrition and breastfeeding were 5.6 (SD 1.6) and 2.9 (SD 1.0) respectively out of a maximum of 12 (Table 4). These scores were significantly higher at post-training [9.6 (SD 1.1) and 7.0 (SD 1.1) respectively] and 6 months later [9.5 (SD 1.0) and 6.7 (SD 0.9) respectively] ($P < 0.001$). In addition, although no significant difference was detected between the post-training mean scores and those 6 months later, there was a slight decline in the mean scores for nutrition and breastfeeding at 6 months. On the other hand, a highly significant improvement of mean scores at post-training and after 6 months was found for the topics of reproductive health, prevention of infectious disease and client-provider interaction ($P < 0.001$) (Table 4).

The mean performance scores on the separate client-provider interaction items

Table 4 Mean overall knowledge and performance scores of health care providers at pre-training and at initial and 6 months post-training (n = 23)

Topic	A	B	C	ANOVA P-value	Significant post-hoc results ^a
	Pre-training	Initial	6 months		
	Mean (SD)	Mean (SD)	Mean (SD)		
<i>Knowledge</i>					
Healthy nutrition (max. 12)	5.6 (1.6)	9.6 (1.1)	9.5 (1.0)	< 0.001	A–B; A–C
Reproductive health (max. 12)	4.8 (1.6)	8.6 (1.1)	9.4 (1.0)	< 0.001	A–B; A–C; B–C
Breastfeeding (max. 12)	2.9 (1.0)	7.0 (1.1)	6.7 (0.9)	< 0.001	A–B; A–C
Prevention of common infectious diseases (max. 12)	6.2 (1.0)	8.2 (1.4)	8.8 (1.8)	< 0.001	A–B; A–C
<i>Performance</i>					
Client–provider interaction skills (max. 11)	4.4 (1.2)	6.7 (1.1)	8.9 (1.0)	< 0.001	A–B; A–C; B–C

^aA–B: between mean pre-training and initial post-training scores; A–C: between mean pre-training and 6 months post-training scores; B–C: between mean initial and 6 months post-training scores.

SD = standard deviation.

for health care providers showed no significant difference for the item “greeting client” at baseline and initial post-training assessments respectively [5.5 (SD 1.4) and 5.8 (SD 1.2)]. The items “using simple language” and “using health education materials” showed similar results. However, a significant improvement was seen after 6 months ($P < 0.01$), revealing a positive effect of constant implementation and practice on behaviour. All other items showed significantly higher mean scores both at post-training and again at 6 months ($P < 0.001$) (Table 5).

Additional positive results at the RHC level included: arranging convenient afternoon sessions to expand the time dedicated for serving the adolescent women; the opening of an afternoon literacy class for young females, run by social workers affiliated to the RHC and supported by the RHC director and the district health authorities; continued support by the health team for the communication channels with the community leaders to maintain support for service development; and developing

a performance-based incentive system for all health care providers based on a refined monitoring and reporting system.

At the client level

On reviewing the records cards given to the women, a considerable increase in the utilization of health promotion services was noted. During the 6 months following the initiation of the interventions, 62% of them visited the RHC 12+ times, 29% visited the RHC 9–12 times and 9% visited the RHC < 9 times, compared with an average of 0–5 visits in the 6 months preceding interventions. The overall reasons for visits were: attending health education sessions (54%), counselling from the health team (24%) and seeking medical care (16%), while 6% were for follow-up visits.

At post-intervention FGDs the interviewed women expressed their appreciation of the changes in services, including the afternoon sessions at the RHC, drug supplements and improvements in client–provider interaction style

Table 5 Mean scores on each item of the client-provider interaction checklist of health care providers at pre-training and at initial and 6 months post-training (n = 23)

Performance item	A	B	C	ANOVA P-value	Significant post-hoc results ^a
	Pre-training Mean (SD)	Initial post-training Mean (SD)	6 months post-training Mean (SD)		
Greeting client	5.5 (1.4)	5.8 (1.2)	9.2 (1.1)	< 0.001	A-C; B-C
Putting on ID tags	0.0 (0.0)	2.2 (2.0)	3.6 (1.5)	< 0.001	A-B; A-C; B-C
Seating client	8.4 (2.0)	10.6 (1.4)	13.9 (1.1)	< 0.001	A-B; A-C; B-C
Use client's familiar name	3.8 (1.0)	5.9 (1.2)	11.7 (1.7)	< 0.001	A-B; A-C; B-C
Active listening to the client	7.7 (2.1)	9.9 (1.3)	11.8 (1.3)	< 0.001	A-B; A-C; B-C
Allow for relevant questions	6.2 (1.1)	9.1 (2.0)	11.8 (1.5)	< 0.001	A-B; A-C; B-C
Proper nonverbal communication	4.0 (1.5)	7.6 (1.3)	10.5 (1.7)	< 0.001	A-B; A-C; B-C
Using simple language	10.8 (2.0)	10.7 (1.1)	13.5 (1.2)	< 0.001	A-C; B-C
Using health education materials	2.2 (2.3)	2.6 (2.2)	3.9 (1.9)	0.012	A-C; B-C
Optimum response to client inquiries	2.2 (1.5)	5.6 (1.4)	7.3 (1.7)	< 0.001	A-B; A-C; B-C
Privacy and confidentiality	6.1 (1.6)	7.7 (1.1)	14.2 (1.2)	< 0.001	A-B; A-C; B-C

^aA-B: between mean pre-training and initial post-training scores; A-C: between mean pre-training and 6 months post-training scores; B-C: between mean initial and 6 months post-training scores.
SD = standard deviation.

Discussion

The concept of female youth-friendly health services and facilities was developed in response to increasing demand on the part of health systems, facilities and communities to improve the access and quality of health services for female adolescents. This concept was initially designed to help programme managers assess the extent to which their facility is already reaching youths, and identify the characteristics of their programme that discourage young people from accessing services [1]. According to the *World health report 2000*, Egypt's health care system performs relatively poorly in both the criteria of responsiveness and fairness, ranking 14th and 16th among Eastern Mediterranean Region countries respectively [16]. Such findings highlight the scope that exists for improving the health care system's ability to satisfy

user's expectations even with the limited national resources available. Evidence suggests that the quality of care in government-run PHC clinics has much improved, and in many aspects, such as accessibility and coverage of rural areas, is quite good. However, other elements of effectiveness and efficiency remain inadequate, as reflected by poor utilization [17].

The current study involved multifaceted interventions, at the community, RHC and individual level to improve the processes of care delivery to the targeted adolescent women. The results show that 60.1% of the participants were of low social status and only 26.0% were currently enrolled in school (where they would be eligible for school health insurance services). School entry for girls in Egypt is particularly sensitive to contextual factors and fluctuations in the economy [7]. The 74.0% who dropped out or never attended school attributed this

to “financial reasons”, “getting married” and “father’s will”. Those who never attend or leave school early are more likely to accumulate a burden of ill health and fail to learn viable skills, leaving them poorly prepared for a full, productive adulthood. Conversely, investment in adolescents’ health that enhances knowledge and promotes health status will have far-reaching positive effects in the future [10]. Despite the evidence, health promotion has usually been an add-on in health care, to which only minimal resources are devoted [4].

The mean age at marriage in this study (16.2 years) was similar to that found in national studies [10]. The minimum age for marriage in Egyptian law is 16 years for women, yet different studies have established that this law is commonly violated [18]. During the FGDs, the women reported that the ideal age for marriage is 18–20 years, reflecting a desire to complete their education and be more mature before marriage.

The majority of married adolescent women reported becoming mothers within 1 year of marriage. Almost one-third had problems during pregnancy, which matches the findings of another study in Egypt in which 32% of women had problems during pregnancy [19]. Of all the women who ever got pregnant 13.0% had not had antenatal care during their pregnancy, which is slightly less than data from the Demographic and Health Survey data in 2005 in which 14.7% of females aged under 20 years did not go for pregnancy-related care [20]. In our study, unmarried women also showed under-utilization of PHC services before the intervention, as most never visited the facility, while a few reported sporadic visits for stool and urine examinations. This is concerning, particularly in view of the high prevalence of morbidity detected in this study.

The women’s self-perceptions of health and health-seeking behaviours were poor in

the initial phase of the study. Khattab argues that women in Egypt are encouraged by a variety of cultural circumstances and factors to give their own health a low priority [21]. There are also other factors to be taken into consideration, mainly women’s own estimation and understanding of risk and ill health [22]. Young people need to be aware of health issues, and to develop knowledge and empowerment skills to enact healthy practices, and access health services whenever the need arises.

The main challenge for RHC providers in the current study was to implement practical, simple, reproducible health promotion strategies in the RHC setting to address the existing barriers to health promotion that arise from the health system, patients’ behaviours and traditional physician practice styles. Poor client–provider interaction skills may be responsible for low utilization rates and may be attributed to the characteristics of the health care system, the provider or even the clients themselves. Improving the quality of interactions translates into positive patient outcomes as well as satisfaction [23]. Therefore, training the health care providers on client–provider interaction was an essential tool to help achieve the study goals. Our study showed significant improvements in both knowledge and skills of the RHC team after training. The results also showed that daily practice had a positive impact on improving interaction skills of physicians after 6 months.

At the start of the study, about three-quarters of the participants were utilizing the relevant RHC for curative health services, which is the case for most Egyptians, especially females in rural areas [24]. After the intervention use of the PHC services improved and a majority of the interviewed women acknowledged the modifications in the process of health care delivery that recognized their needs and demands.

This study included a group of female adolescents from just one village and it may not necessarily represent the young female population from other areas or circumstances in Egypt. However, it serves as a pilot study for future research. Additional limitations include the failure to assess the young women's knowledge before the interventions, and our dependence solely on qualitative methods.

As far as the authors are aware, no other work has been undertaken on the role of PHC in health promotion for adolescent

women in Egypt. This study emphasizes the potential role of PHC in promoting the health of these women, as well as providing continuous training programmes for health care providers in sharpening their knowledge, confidence and performance. It demonstrates how an integrated interventional approach, with coordinated efforts from relevant stakeholders and community involvement, can pave the way towards a PHC health-promoting setting for adolescent women.

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