RESEARCH ARTICLE

Care friendliness in adolescent sexual and reproductive health services in Mexico and a characterisation of their clients

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Abstract

Background: Sexual and reproductive health (SRH) is a very important issue in public health programs in low -and middle-income countries (LMICs). Health services that meet specific and differentiated needs of adolescents are increasingly relevant in LMICs. To provide quality services, it is necessary to know the profile of its users and the perspective that adolescents have about SRH services aimed at them.

Methods: We conducted a cross-sectional analysis of primary data from a survey of 489 adolescents recruited in 11 primary-care facilities in the state of Morelos, Mexico. We followed the guidelines outlined in the World Health Organization Quality Assessment Guidebook: A guide to assessing health services for adolescent clients. Data on friendliness of services were obtained through 70 questions divided into 18 characteristics which, in turn, were grouped into five domains: equity, accessibility, acceptability, appropriateness, and effectiveness. The "friendliness" (a proxy for quality of care) of services was measured according to an additive index of friendliness (FI) ranging from 0 (no friendliness) to 1 (maximum friendliness). We also described the socio-demographic, SRH, and service utilization profiles of clients.

Results: The health services analysed were characterised as having low levels of accessibility (FI = 0.62) and effectiveness (FI = 0.77), moderate acceptability (FI = 0.84), and high levels of appropriateness (FI = 0.93) and equity (FI = 0.92). Of the total number of adolescents surveyed, 51% stated that they had initiated a sexual life, 37% did not use any method of protection during their first sexual intercourse and 64% of the adolescents had already experienced a pregnancy.

Conclusions: It is essential to improve the accessibility and effectiveness dimensions of adolescent-friendly services in Mexico. This requires the implementation of strategies specifically designed to promote well-informed, planned and healthy sexual behaviours that avert risk and vulnerability. Strategies need to consider the profile of the adolescent client population.

KEYWORDS
adolescent health service, adolescent sexual and reproductive health, Mexico, quality of health care, youth-friendly health-care services

Highlights

- Adolescents shown high risk behaviour, with onset of sexual life and low prevalence of contraceptive use.
- Adolescent health services must be strengthened by improving their accessibility and effectiveness.
- Adolescent health services require strategies to attract and retain its target population.
- It is the responsibility of health systems to provide quality services to meet the specific needs of the adolescent population.

1 | INTRODUCTION

The sexual and reproductive health (SRH) of adolescents has acquired global relevance.[1] According to the World Health Organization (WHO), developing countries register 21 million pregnancies annually among adolescents aged 15-to-19 years.[2]

The documented social consequences of adolescent pregnancies include a high risk of maternal and infant mortality, complications during gestation and birth,[3] educational gaps, and the intergenerational transmission of poverty.[4] In addition, adolescents confront barriers to health care involving insufficient money for transportation to health facilities, stigmatisation by health staff and a lack of autonomy for making decisions regarding their own health.[5]

With 77 cases per 1000 women, Mexico ranks first in adolescent pregnancies among the member countries of the Organization for Economic Cooperation and Development.[6] It has been estimated that 23% of Mexican adolescents between the ages of 12 and 19 years are sexually active. Of these, 30% did not use a contraceptive method

(CM) at the time of first sexual intercourse, and 52% have been pregnant at least once, even though the majority (90%) were cognizant of at least one CM.[7]

Developing effective strategies for the SRH of adolescents requires knowledge of their socio-demographic and health profiles, as well as an understanding of their relationships with health-service providers, their involvement in specific health programs and their connection to health policies.[8] Health services need to facilitate and promote specific quality spaces that cover the particular needs of this population.[9,10]

During 2000, Mexico launched "adolescent-friendly services".[9] Twelve years later, with support from the WHO and the United Nations Population Fund, it designed, implemented and institutionalised a Comprehensive Care Model for Adolescent Reproductive Health charged with establishing the standards for the provision of Adolescent-Friendly Health Services (AFHS) in accordance with the recommendations of international organizations.[9] Operating at primary-care facilities, the AFHS are responsible for ensuring that adolescents receive personalised and quality care free of any form of stigmatisation or discrimination.[9] The WHO has recommended complementing this initiative with a Guidebook for assessing the level of service friendliness according to five domains: equity, accessibility, acceptability, appropriateness and effectiveness. It has also recommended that the perspectives of clients and providers together with those of the community at large are taken into account.[10]

Adolescent-Friendly Health Services performance has been assessed primarily as regards their implementation and care processes, namely the possibility of obtaining the required health care and the attitude of staff at the facilities.[11] In the case of Colombia, none of the friendliness domains has scored higher than 85%, suggesting a need to strengthen and redirect actions towards the achievement of adequate, confidential and secure care for adolescents including a minimal loss of clients to follow-up.[12] As for Mexico, a study of five states in 2009 assessed AFHS compliance with the Official Mexican Norm on Family Planning Services[13] from an institutional standpoint and from the perspective of clients.[14] The results indicated that none of the health-care facilities analysed complied with the established guidelines regarding the availability of assorted contraceptive methods, the information provided to clients, the technical competency of service providers, client-provider interpersonal relations and a follow-up mechanism for promoting continued CM use.

Although AFHS have been operating in the region of Latin America for almost 2 decades, scientific literature on the quality of their care according to international standards is scarce. Based on the Quality Assessment Guidebook issued by the WHO,[10] this study contributes original evidence regarding the level of friendliness offered by adolescent SRH services in Mexico called AFHS, together with the socio-demographic, SRH and service-utilization profiles of their clients. To this end, we analysed data collected in a representative sample of primary-care facilities serving a population without Social Security coverage in Morelos, a Mexican state marked by a prevalence of adolescent pregnancies 12% above that of the national population.[15,16]

2 | MATERIAL AND METHODS

2.1 | Friendly health services for adolescents in Mexico

Friendly health services for adolescents are specially designed to provide SRH care attention for adolescents according to their needs. These services are located within the medical units of the Ministry of Health. Friendly health services are free for adolescents aged 10–19 years old and provides information, guidance, counselling, medical care, psychological care, contraceptive methods, and others health services.[9]

Mexico currently has 3,116 friendly health services that are distributed in the 32 states of the country. In these services, the adolescents receive attention from different health professionals like medical doctors, nurses, social workers, psychologists, and health educators. The options of services vary according to the characteristics of the medical unit. These services must apply rules and procedures that guarantee that care is accessible for adolescents, with absolute respect for their sexual and reproductive rights. These services must be provided without the

presence of parents or guardians to ensure the privacy and confidentiality of the services. Moreover, a privacy policy guarantees that there will be no disclosure of personal information from the providers to any person.[9]

2.2 | Study context

Morelos is a state in the central region of Mexico and has about 2 million inhabitants (51% are females).[17] In 2016, 46.7% of the population of Morelos was in a situation of poverty, and this number was higher than the national average (43.2%).[18] In 2016, about 18% of the population in Morelos did not have access to health care services.[18] Among those with access to health care services, 52% were affiliated with the Popular Insurance (currently extinct), 30% with the Mexican Institute of Social Security (IMSS), and 6.3% with the Institute of Social Security for Government Workers (ISSSTE), and less than 1% with other governmental institutions or private institutions.[18] Women of reproductive age (from 15 to 49 years old) totalled 547,047 (54% of all women in the entity), of whom 16% were adolescents. In Morelos, the adolescent fertility rate (per 1000 girls aged 15–19 years) was 72.91, similar to the national rate (72.89) in 2016.[17]

2.3 | Study design and data source

Based on an exit survey, we conducted a cross-sectional study among 10-to-19-year-old adolescents using AFHS in the state of Morelos, Mexico (n = 489). Data were collected from March to May 2017 in a representative sample of health facilities offering AFHS, including 11 of the 17 existing state-level health facilities.

2.4 | Sample size and sampling

Ten of the 17 MoH clinics with AFHS in 2017 were randomly selected. The selection of nonexclusive centres for adolescents was adjusted by unit size, geographic location and volume of services in the last year. In addition, we directly select the Centre for Comprehensive Adolescent Health Care (CAISA – *Centro de Atención Integral a la Salud del Adolescente*), a clinic dedicated to serving the adolescent population exclusively and considered standard in AFHS. Therefore, the total sample was obtained from 11 facilities. The clinics were distributed in all the health jurisdictions or technical-administrative units in the state of Morelos.[19]

Adolescents between 10 and 19 years old, who used AFHS services and lived in the state of Morelos were eligible to participate in the survey. We used the formula for the sample size for the mean, considering a finite population. Based on a previous study,[20] we selected an average friendliness score of 68 with a standard deviation of 6.9 points, the level of precision was 0.05%, and the confidence level was 95%. Therefore, we estimated that the minimum sample size of adolescents needed to survey was 326 adolescents. Additionally, we considered a loss of 10%, so the final number of adolescents to get the minimum sample size was 359. The adolescents were selected with probability proportional to the number of health services that each health unit provided in the previous year to the start of the study.

2.5 | Survey instrument and data collection

Adolescents who were eligible to participate were randomly selected. Participants completed the survey using computer-assisted face-to-face interviews. The field team consisted of six trained interviewers with experience working with the adolescent population.

The measuring instrument was designed to collect data from AFHS clients regarding their socio-demographic profiles, sexual and reproductive histories, use of friendly services and perceptions on friendliness. We followed the guidelines outlined in the WHO Quality Assessment Guidebook: A guide to assessing health services for adolescent clients.[10] Data on friendliness of services were obtained through 70 questions divided into 18 characteristics which, in turn, were grouped into five domains: equity (three characteristics), accessibility (four characteristics), acceptability (seven characteristics), appropriateness (one characteristic), and effectiveness (three characteristics) (Table 1).

The socio-demographic characteristics analysed included sex, age, education, marital status, employment status, type of household and health insurance (*Mexican Institute of Social Security, IMSS*; *Institute of Social Security for Government Workers, ISSSTE*; *Seguro Popular de Salud*; other or unknown, and mixed). With respect to sexual history, we explored characteristics of sexual behaviour, as well as knowledge and use of CMs.

2.6 | Statistical analysis

The friendliness of AFHS, a proxy for quality of care, was assessed according to an additive index of friendliness (FI) synthesising in one score (with values ranging from zero to one) all the questions and domains outlined by the WHO.[10] First, for each question, we obtained the proportion of positive responses regarding the friendliness of care; second, we combined the proportions according to the characteristics and divided the total by the number of questions, resulting in a FI by characteristic ranging from zero (no friendliness) to one (maximum friendliness); third, we added the proportions of each question by domain and divided this by the number of questions, obtaining an FI total for each domain within the same range: from zero to one; and finally, we calculated the global FI score as the sum of all positive responses for friendliness divided by the total number of questions, based on the methodology proposed by the WHO, for the calculation of each domain.[10]

Considering the distribution of the data, and the expected friendliness in specialised services for adolescents, we classified the index into low (<0.80), moderate (0.80–0.89), and high scores (≥0.90).

Analyses were performed using the Stata MP15.1 statistical package. The tables below present measures of central tendency (frequency and mean) and dispersion (95% confidence intervals and interquartile range) for the characteristics (socio-demographics, sexual and reproductive history, and AFHS use) and global FI by domain and characteristic.

2.7 | Ethics

This study was approved by the Research, Ethics and Biosafety Committees of the National Institute of Public Health in Mexico (ID: 1365). Participating in this study was voluntary and without any incentive. Written consent or assent was obtained from all participants as appropriate for their age, and written informed consent was obtained from all parents or guardians of minor participants.

3 | RESULTS

Of the total adolescents interviewed, 68.5% were women, the average age was 15.7 years, 71% mentioned that they were studying at the time of the survey while 28.4% were working, 26.4% stated that they lived or had lived with a partner, and 82.4% reported that they were insured through the *Seguro Popular de Salud* (Table 2).

Half of those interviewed stated that they had become sexually active on average at the age of 15 (Table 3) with individuals aged 16 years (for males), and 18 years (for females). Half of the interviewees reported having had only one sexual partner. Among those who were not sexually active, 43% were adolescents aged 10 to 13 years, 41% were

TABLE 1 Definition of the characteristics and domains of friendliness

Domain	Características	Definition
EQUITABLE: All adolescents, not just certain groups, are able to obtain the health services they need.	Policies and procedures that ensure equitable health care	The policies or procedures do not restrict the provision of health services.
	Equal treatment in health care	Health-care providers treat all adolescent clients with equal care and respect, regardless of status.
	Equal treatment at the health facility	Support staff treat all adolescent clients with equal care and respect, regardless of status.
ACCESSIBLE: Adolescents are able to obtain the services that are provided.	Policies and procedures that ensure accessibility	Policies and procedures ensure that health services are free of charge.
	Convenient hours of operation	The health facility offers convenient hours of operation.
	Adequate information about services	Adolescents are well-informed about the range of available comprehensive health services and how to obtain them.
	Dissemination of information throughout the community	Community members understand the benefits that adolescents will gain by obtaining the health services they need, and support their provision
ACCEPTABLE: Health services are provided in ways that meet the expectations of adolescent clients.	Policies and procedures that ensure confidentiality	Policies and procedures ensure patient confidentiality.
	Privacy	The health facility ensures the privacy of users.
	Respect for the opinions of adolescents	Health-care providers are considerate and easy to relate to regarding the opinions of adolescents.
	Adequate waiting time	The health facility ensures that consultations occur in a short waiting time, with or without an appointment, and (where necessary) swift referral.
	Clean environment	The health facility has an appealing and clean environment.
	Information support	The health facility provides information and education through a variety of channels.
	Active participation of adolescents	Adolescents are actively involved in designing, assessing and providing health services.
APPROPRIATE: The health services that adolescents need are provided.	Fulfilment of needs	The required package of health care is provided to fulfil the needs of all adolescents either at the health facility or through referral linkages.

TABLE 1 (Continued)

Domain	Characterístics	Definition
EFFECTIVE: The right health services are provided in the right way and make a positive contribution to the health of adolescents.	Competent health-care providers	Health-care providers have the required competencies to work with adolescents and to provide them with the required health services.
	Sufficient consultation time	Health-care providers are able to dedicate sufficient time to work effectively with their adolescent clients.
	Sufficient equipment and supplies	The health facility has the required equipment, supplies, and basic services necessary to deliver the required health services.

Source: The World Health Organization (WHO) Quality Assessment Guidebook: A guide to assessing health services for adolescent clients[10]

adolescents aged 14 to 16 years, and 16% were adolescents aged 17 to 19 years. Among the adolescents who had engaged in sexual relations, 78.8% had done so in the 3 months prior to the survey.

Almost all (96%) of the subjects were aware of at least one CM, with the male condom being the best known (89%) overall and the birth control pill the best known (70%) among hormonal methods. However, 37% used no CM at first sexual intercourse. The main reasons cited were, first, that the sexual encounter had not been planned (45%), and second, that contraceptives were unavailable (15%). Among those who used CMs, 60% acquired them in pharmacies, while 25% obtained them from health centres. As many as 64.1% of the sexually active female adolescents reported having been pregnant, one out of three before the age of 16 (Table 3).

Broken down by sex, significant differences were observed in the percentage of adolescents who did not study or had abandoned school (34% vs. 19% and 29% vs. 13% between females and males, respectively). In addition, more male than female adolescents were working (78.5% vs. 56.5%, respectively) (Table 2) and had initiated their sexual lives (59% vs. 35%, respectively) at the time of the interviews. Among female adolescents, 38% used no CM at last sexual intercourse versus 12.5% of males. In contrast, a higher percentage of sexually active males (29%) than females (10%) reported having had four or more partners (Table 3).

Three out of 10 adolescents reported using AFHS for the first time. On the other part, 61.5% attended medical consultation at AFHS and only 2% for family planning counselling or obtaining CMs (Table 4).

Finally, the health facilities visited registered a global FI value equal to 0.79 (Table 5). The individual analysis of each domain showed the following. According to the FI results, they exhibited low levels of accessibility (FI = 0.62) but were highly equitable (FI = 0.92) and adequate (FI = 0.93). The lowest-rated accessibility characteristics were policies and procedures that ensure access (0.60) and adequate information about services (0.60). Conversely, facilities were rated as highly equitable and adequate in terms of providing care with respect (0.94) and meeting the reported needs of adolescents (0.93).

4 | DISCUSSION

We assessed the level of friendliness with which SRH services were provided to Mexican adolescents called AFHS, and characterised their clients as regards socio-demographic characteristics, SRH and utilization of health services.

Our results revealed a high proportion of sexually active adolescents who used no CM at first sexual intercourse. Consistent with previous studies,[21] these findings suggest a need for increased efforts in the area of adolescent SRH, particularly as regards the prevention of high-risk behaviour and pregnancy. The male condom is the most frequently

TABLE 2 Differences in the socio-demographic profiles of the study population according to sex

			Men		Women		p-val
	All	%	N = 154	%	N = 335	%	χ2
Age (years)							
10–13 (early)	106	21.7	44	28.6	62	18.5	<0.001
14–16 (middle)	169	34.6	59	38.3	110	32.8	
17–19 (late)	214	43.8	51	33.1[a]	163	48.7[a]	
Marital status							
Single	365	74.6	137	89.0[a]	228	68.1[a]	<0.001
Married	9	1.8	1	0.7	8	2.4	
Free union	112	22.9	16	10.4[a]	96	28.7[a]	
Separated	3	0.6	0	0	3	0.9	
Education							
Elementary school or lower	104	21.3	35	22.7	69	20.6	0.802
Middle school	237	48.5	75	48.7	162	48.4	
High school and beyond	148	30.3	44	28.6	104	31	
Currently studies	347	71	125	81.2	222	66.3	0.001
Has abandoned school	81	23.3	16	12.8	65	29.3	<0.001
Works	139	28.4	67	43.5	72	21.5	<0.001
Health insurance							
IMSS	45	9.2	17	11	28	8.4	0.586
ISSSTE	8	1.6	3	2	5	1.5	
Seguro popular	403	82.4	124	80.5	279	83.3	
None	11	2.3	5	3.3	6	1.8	
Other or unknown	22	4.5	5	3.3	17	5.1	
Household residents[b]							
Immediate family	389	79.6	141	91.6	248	74	<0.001
Partner's family	46	9.4	5	3.3	41	12.2	0.002
Spouse	87	17.8	13	8.4	74	22.1	<0.001
Another family member	12	2.5	3	2	9	2.7	0.624
Other	18	2.7	1	0.7	17	5.1	<0.001
House in which s/he lives							
Owned by parent(s) or guardian(s)	346	70.8	129	83.8[a]	217	64.8[a]	<0.001
Owned by partner's family	64	13.1	5	3.3[a]	59	17.6[a]	
Owned by her/him	9	1.8	3	2	6	1.8	
Rented	28	5.7	6	3.9	22	6.6	
Other	42	8.6	11	7.1	31	9.3	

Note: Italic values denote significance level.

Abbreviations: IMSS, Mexican Social Security Institute; ISSSTE, Institute of Social Security for Government Workers.

[a]Groups showing differences.

[b]Total percentage exceeds 100 because responses are not mutually exclusive.

TABLE 3 Differences in the sexual and reproductive histories of the sampled population according to sex

			Men		Women		p-val
	All	%	n = 154	%	n = 335	%	χ²
Has had sexual relations (N = 489)	251	51.3	53	34.9	198	59.3	<0.001
Age at first sexual intercourse (years) (n = 251)							
10–13	26	10.4	7	13.2	19	9.6	0.656
14–16	168	66.9	33	62.3	135	68.2	
17–19	57	22.7	13	24.5	44	22.2	
Age of partner at first sexual intercourse (years) (n = 246)							
10–13	9	3.7	7	13.2[a]	2	1.04[a]	<0.001
14–16	78	31.7	28	52.8[a]	50	25.9[a]	
17–19	105	42.7	12	22.6[a]	93	48.2[a]	
>20	54	22	6	11.3[a]	48	24.9[a]	
Total number of sexual partners (n = 246)							
One	125	50.8	16	31.4[a]	109	55.9[a]	<0.001
2 or 3	87	35.4	20	39.2	67	34.4	
4 or more	34	13.8	15	29.4[a]	19	9.7[a]	
Has had sexual relations in the last 3 months (n = 251)	198	78.9	40	75.5	158	79.8	0.493
Number of sexual partners in the last 3 months (n = 198)							
One	185	93.4	35	87.5	150	94.9	0.215
2 or more	11	5.6	4	10	7	4.4	
Has knowledge about contraceptive methods (n = 489)	470	96.1	147	95.5	323	96.4	0.609
Knowledge of contraceptive methods (n = 470)[b]							
Male condom	437	89.4	144	97.96	293	90.71	<0.001
Emergency contraceptive pill	177	36.2	43	29.25	134	41.49	0.011
Tablets or pills	343	70.1	89	60.54	254	78.64	<0.001
Injections	188	38.5	43	29.25	145	44.89	<0.001
IUD	268	54.8	55	37.41	213	65.94	<0.001
Implants	198	40.5	32	21.77	166	51.39	<0.001
Ovules, foam	18	3.7	9	6.12	9	2.79	0.081
Female surgery	27	5.5	9	6.12	18	5.57	0.812
Male surgery	28	5.7	13	8.84	15	4.64	0.075
Rhythm	13	2.7	8	5.44	5	1.55	0.017
Coitus interruptus	32	6.5	10	6.8	22	6.81	0.997
Female condom	61	12.5	24	16.33	37	11.46	0.145
Patches	94	19.2	25	17.01	69	21.36	0.274
Knowledge about contraceptive methods (n = 470)[b]							
Barrier	455	96.81	144	97.96	311	96.28	0.338
Hormones	467	99.36	147	100	320	99.07	0.241
Definitive	39	8.3	16	10.88	23	7.12	0.17
Natural	41	8.72	16	10.88	25	7.74	

(Continues)

TABLE 3 (Continued)

	All	%	Men n = 154	%	Women n = 335	%	p-val χ^2
Method used at first sexual intercourse (n = 251)[c]							
None	95	37.9	15	28.3	80	40.4	0.107
Male condom	146	58.2	36	67.9	110	55.6	0.105
Hormonal	9	3.6	1	1.9	8	4	0.454
Other	3	1.2	3	5.7	0	0	<0.001
Place where s/he obtained the contraceptive method (n = 153)							
Health facility	38	24.8	8	21.6	30	25.9	<0.001
Pharmacy	93	60.8	19	51.4	74	63.8	
School	8	5.2	6	16.2[a]	2	1.7[a]	
Home	9	5.9	1	2.7	8	6.9	
Other	5	3.3	3	8.1[a]	2	1.7[a]	
Method used at last sexual relation in the last 3 months (n = 198)[c]							
None	65	32.8	5	12.5	60	38.0[a]	<0.001
Male condom	74	37.4	25	62.5	49	31.0[a]	<0.001
Hormonal	55	27.8	8	20	47	29.8	0.219
IUD	11	5.6	3	7.5	8	5.1	0.548
Place where s/he obtained the contraceptive method							
Health facility	86	64.7	19	54.29	68.37	63.4	0.178
Pharmacy	40	30.1	14	40	26	26.53	
School	3	2.3	1	2.86	2	2.04	
Home	1	0.8	1	2.3	0	0	
Other	3	2.3	0	0	3	3.06	
Women who have been pregnant (n = 251)					127	50.6	

Note: Italic values denote significance level.
[a]Groups showing differences.
[b]Knows at least one method in this group.
[c]Responses are not mutually exclusive.

used CM, which may be related to greater knowledge about its use and how it works, in comparison to hormonal methods, as has been reported in the Mexican population.[22]

Among those adolescents who decided to use CMs at first sexual intercourse, a high percentage obtained them in pharmacies as an out-of-pocket expenditure; however, research has shown that the need to purchase CMs constitutes a barrier to use.[22] This situation was less frequent among sexually active adolescents, who tended to approach the health system more frequently in search of information and diversified CMs. Increased and more effective actions are required in order to ensure that adolescents can access SRH information and CMs prior to engaging in sexual relations. It has been documented that sex education and counselling strategies based on the needs of adolescents delay the beginning of sexual relations and increase the use of contraception.[23] Community educational strategies actively involving youth, parents and other community leaders can also contribute to delaying the start of sexual life, as well as ensuring more information on and effective access to methods of protection.[24]

The prevalence of pregnancy among adolescents in Morelos, Mexico (64%) – a population group without Social Security coverage and living in marginalised urban areas – is greater than that reported for the general population in

TABLE 4 Utilization of adolescent-friendly services by the sampled population

	n = 489	%	CI 95%
Previous utilization of SRH services	365	74.6	(70.6–78.3)
Number of consultations			
Mean		9.6	(8.8–10.3)
Median		8.0	(4–15)[a]
Reason for consultation on the day of the interview			
Medical consultation	301	61.5	(57.4–66.0)
Nutritional counselling	11	2.2	(1.2–4.0)
Psychological counselling	28	5.7	(4.0–8.2)
Dental care	17	3.5	(2.2–5.5)
Contraception counselling	5	1.0	(0.4–2.4)
Request for a contraception method	5	1.0	(0.4–2.4)
Vaccination	15	3.1	(1.9–5.0)
Request for a medical certificate	2	0.4	(0.1–1.6)
Prospera talk	10	2.0	(1.1–3.8)
Does not know or does not answer	2	0.4	(0.1–1.6)
Various services[b]	47	9.4	(7.1–12.3)
Accompanying someone else	12	2.4	(1.5–4.5)
Youth workshops	10	2.0	(1.1–3.8)
Other	24	4.7	(3.1–7.0)

Abbreviation: SRH, sexual and reproductive health.

[a]interquartile range.

[b]More than one reason for consultation.

the state (52%). While the vast majority are insured through the *Seguro Popular* programme, at the time of the study, it has been shown that, in comparison to other population groups and even to the national average, adolescents confront persisting social constraints such as unemployment, educational gaps and low income.[7,15] This population is the one who mostly attends the health services addressed in this study, since they are public services aimed at the population without formal employment or unemployed. Accordingly, failing to act effectively to reduce the high levels of adolescent pregnancy can limit the opportunities of youth for education and workforce participation, thus perpetuating poverty.[9] In line with other studies,[25] our findings highlight that the social and economic environment in which adolescents develop exerts an important influence on SRH indicators.

Adolescent-Friendly Health Services provide a range of specialised services beyond traditional health care. Nonetheless, the lack of information on these services, offered in health facilities, deters adolescents from seeking help at health-care centres for their individual needs, and may explain why less than 2% of interviewees reported having sought CMs or counselling. This is critical, since the search for health services begins with identifying services and an awareness on the part of the target population of the services offered.[26] Our findings suggest that participating health facilities may be missing the opportunity to attract adolescents for lack of effective communications and outreach strategies regarding the types of services available for youth.

Our results suggest that the female adolescents studied face a double vulnerability. On the one hand, they suffer significant social vulnerability in finding fewer opportunities to study or work than other adolescent populations; on the other hand, notwithstanding their young age, a large proportion are already living in union compared to the general population of males their age. This group is also highly vulnerable by virtue of their sexual behaviour, as more than half have already become sexually active without protection. These findings serve to align adolescent service strategies in such a way that they help eliminate inequities deriving from gender.

TABLE 5 Friendliness of adolescent Sexual and reproductive health (SRH) services according to characteristics and domains

Domain	Característic	Friendliness index
Equitable	Policies and procedures that ensure equitable care	0.87
	Equal treatment in health care	0.94
	Equal treatment at the health facility	0.94
	Global	0.92
Accessible	Policies and procedures that ensure accessibility	0.60
	Convenient hours of operation	0.90
	Adequate information about services	0.60
	Dissemination of information throughout the community	0.62
	Global	0.62
Acceptable	Policies and procedures that ensure confidentiality	0.93
	Privacy	0.79
	Respect for the opinions of adolescents	0.91
	Adequate waiting time	0.67
	Clean environment	0.89
	Information support	0.84
	Active participation of adolescents	0.39
	Global	0.84
Appropriate	Fulfilment of needs	0.93
Effective	Competent health-care providers	0.86
	Sufficient consultation time	0.92
	Sufficient equipment and supplies	0.43
	Global	0.77
GLOBAL FRIENDLINESS INDEX (FI)		0.79

In correspondence with previous studies, our findings confirm that female adolescents are more likely to use health systems.[27] A potential explanation of this phenomenon could be related to the prevailing traditional gender values in society, which could be reproduced by the health sector, promoting actions that promote body care and health care, almost exclusively for female adolescents. In contrast, hegemonic masculinity values may be related to the lack of participation of male adolescents in preventive actions for SRH, and frequently, health services use is limited to problems associated with sexually transmitted infections and sexual dysfunction.[27]

The quality of the AFHS analysed proved suboptimal. Our study demonstrates that adolescents perceive friendly services to be largely inaccessible as a result of bureaucratic and economic barriers in the policies and procedures, including the requirement of making an appointment before receiving care and the need to purchase supplies after consultation. This requires a revision of such policies and procedures, as well as the implementation of process guides for comprehensive adolescent health[28,29] in the context of the model of Comprehensive Sexual and Reproductive Care for adolescents[9] and the National Strategy for Pregnancy Prevention.[6]

The friendliness of the health services analysed was affected by the scarce or complete lack of adolescent participation in the design and implementation of their strategies even though it has been shown to contribute to the successful implementation and functioning of these services. It has been suggested that challenges in achieving adolescent participation concern not only the designation of roles and responsibilities, but also the presence of affective relationships in the implementation of programs.[30] Nonetheless, it has been reported that the active participation of adolescents boosts the adoption of contraception and safe sex practices and has a positive effect on

attitudes towards sexuality.[30] Another characteristic affecting AFHS accessibility scores is the community outreach component of services. It has been shown that engaging the community can raise awareness of the needs of youth and trigger community support for interventions aimed at this population, generating a change of attitudes towards adolescent sexuality.[31]

The effectiveness of the AFHS suffers from insufficient supplies and CMs to meet the needs of adolescents. It has been reported that inefficiencies and bureaucratic issues in the supply chain affect the availability of CMs in health facilities, above all in marginalised zones.[32] This result is reflected in the economic barriers perceived by clients, half of whom are obligated to incur medical expenses.

Existing evidence strongly suggests that there can be no improvement in the quality of care offered adolescents at primary-care facilities without strengthening all pillars of the health system: governance, financing, and the labour force. It is also essential to ensure that the necessary medications, supplies and technology are fully available. Therefore, actions at the national and municipal levels pertaining to all pillars of the health system are required in order to allow care providers and administrators to establish international standards.[33] Given the double vulnerability confronting these adolescents, gender differences could exist in the perception of the friendliness of services received. Future studies would generate valuable evidence concerning these possible differences.

Although some studies refer to the need to train personnel in the provision of adolescent care,[34,35] our results suggest that the AFHS are seen to be equitable and adequate, indicating that these services are provided in an atmosphere of respect and comfort. It has also been documented that ensuring the effectiveness of and access to AFHS requires combining training and sensitivity strategies for personnel, improving the installations where care is provided, disseminating services offered throughout the community, schools and the media, and having AFHS implement community strategies in populations with limited access.[26]

Our study offers three principal strengths: (i) based on a representative sample of adolescent users, we document the extent to which AFHS meet the standards for quality of care established under the WHO friendliness domains; (ii) from a user perspective, we contribute information on the extent to which the friendly services offered are adjusted to meet the needs and expectations of clients; and (iii) we identify who uses these services, thus helping to identify those adolescents who are not being reached by the public health strategies currently in effect.

However, we cannot fail to recognize several limitations: (i) potential bias exists as a result of self-reporting of the data analysed; (ii) the measuring instrument requires greater statistical validation; and (iii) the data analysed come solely from the client population, and they are not representative for the entire population of adolescents in the state of Morelos, meaning that estimations of friendliness may be biased. The level of friendliness may have been overestimated, as the perceptions of clients tend to be more positive once they have received care. Future studies on the perceptions of the population not using the services designed for them would contribute to a greater understanding of the factors associated with failure to use the services.

In summary, Mexico, like other middle- and low-income countries, needs to prioritize and/or strengthen strategies for achieving universal access to SRH services and sex education as part of the human rights for adolescents. Intersectoral collaboration is crucial to the delivery of comprehensive SRH care for adolescents in a manner that is equitable, intercultural and respectful of sexual and reproductive rights. It is also essential to work with civil society using strategies for improving the accessibility and quality of SRH care, considering the needs of the adolescent population. The COVID-19 pandemic and the breakdown in the provision of health services have disproportionately affected adolescents in contexts of high social vulnerability.[36] It is important to mention that this situation imposes the need to strengthen and expand this type of service and invest in it.

CONFLICTS OF INTEREST

The authors of this study declared having no conflict of interest.

DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available on request from the corresponding author. The data are not publicly available due to privacy or ethical restrictions.

ETHICS STATEMENT

This study was approved by the Research, Ethics and Biosafety Committees of the National Institute of Public Health in Mexico (ID: 1365). Participating in this study was voluntary and without any incentive. Written consent or assent was obtained from all participants as appropriate for their age, and written informed consent was obtained from all parents or guardians of minor participants.

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