Abstract
There has been a dramatic shift in the type of health issues that affect adolescents across the world, with a resulting requirement for health services to re-orient themselves to address these problems. Sexual and reproductive health is still a major problem in many low- and middle-income countries (LMIC), but is increasingly relevant for unmarried as well as married young women. While undernutrition remains a key problem, the obesity epidemic is increasingly affecting adolescents in LMIC. Mental disorder and risks for later noncommunicable diseases (e.g. tobacco use) typically have their onset during adolescence, and accidents and injuries disproportionately affect the young. Yet, historically, health services in LMIC settings have assumed that adolescence is a healthy period of life, and that adolescents have little need to engage in health services. Adolescent-friendly health care refers to the provision of quality healthcare for adolescents. The goal is that health services are available and able to respond to the changing needs of young people and can actively engage them in their own healthcare, while supporting their parents and carers. Yet there are many barriers. The most important relate to access, acceptability and appropriateness of healthcare. A particular challenge is to provide healthcare that is private and confidential, and that ‘goes beyond the presenting complaint’ as there is often a gap between the illnesses that young people present with to health services and their wider concerns. Psychosocial history taking is the most effective tool for engaging young people in their health care and identifying the range of health issues they experience. Active engagement helps set expectations around self-management practices, is a prerequisite to behavior change, and a strategy to support future engagement with adult health services. A challenge for health educators and health services is to ensure that the contemporary health workforce is appropriately skilled to provide adolescent-friendly healthcare to all young people and
that health services have an appropriate policy framework in place to deliver the health services that young people need. Increasing participation in secondary schools offers an additional platform to deliver primary care services. Beyond this, there is much interest in the role of immunization as a point of contact with health services that could offer a wider range of interventions. Media-based interventions also provide great promise as a platform for health education and behavior change interventions, although trials of media-based interventions are still very limited with modest effect sizes.

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The health of adolescents and young adults is gaining new attention globally with growing appreciation of the importance of adolescence within the life course. Sexual and reproductive health remains a major problem in many low- and middle-income countries (LMIC). However, growing numbers of unmarried sexually active girls have resulted in increasing rates of sexually transmitted infections (STIs) including HIV/AIDS and unsafe abortion in unmarried as well as married girls. While undernutrition remains an issue for adolescents in many parts of the world, the epidemic of overweight and obesity is increasingly affecting adolescents in LMIC. Once considered insignificant beyond adolescence, health-related behaviors and states that are adopted during adolescence (e.g. substance use) or that commonly have their onset during adolescence (e.g. mental disorders, obesity) are now appreciated to have profound significance during adolescence itself, in later adult life and for the health of the next generation [1].

There is growing evidence for preventive interventions targeting community level, education and welfare settings to improve adolescent health and well-being [2]. There is also growing evidence that various platforms for health care delivery provide important opportunities for adolescents and their health, including preventive interventions [3]. In most parts of the world, primary care remains the most important platform for health care delivery to adolescents, although a range of other platforms are also available.

**Adolescent-Friendly Health Care**

Over the past decade, the construct of adolescent-friendly health care has underpinned many efforts to better orientate health service systems to the needs of young people [4]. The strategy emerged from the World Health Organization in 2002 in response to the changing health needs of adolescents in LMIC settings. Adolescent-friendly health care is deeply rooted in knowledge of adolescent development and strongly supported by international policy about health and human rights. For example, the UN Convention on the Rights of the Child
affirms that young people should be involved in decision making around their healthcare in line with their developing capacities for understanding and participation [5].

Table 1 outlines the principles of adolescent-friendly health care. While developed in LMIC settings, these same principles have subsequently been adopted in a number of high-income countries. For example, in the US an Institute of Medicine Report has called for universal access to preventatively oriented services for all adolescents [6], while national health policies in the UK have been developed that endorse the provision of adolescent-friendly health care in both primary health and specialist settings [7].

A recent systematic review of indicators of adolescent-friendly health care from young people’s perspectives identified 8 core domains of central relevance to young people across the world [8]. As shown in table 2, some of these domains relate to a positive experience of care, such as when there is friendly, nonjudgmental communication from staff in an environment that has appropriate privacy and confidentiality of services. Other domains relate to aspects of the physical environment such as cleanliness, or health service management such as short waiting times. Further domains relate to young people wanting healthcare that is comprehensive, consistent with clinical guidelines and that achieve positive health outcomes. Many of these domains are equally relevant for adults. The critical difference is how adolescent-friendly health care is delivered.
Three strategies about ensuring accessibility, acceptability and appropriateness of health services are particularly important to improving the quality of care delivered to adolescents.

**Accessibility**

In higher-income countries, data consistently suggest that the majority of young people attend a primary care service each year. In low-income settings, regular attendance is less common with a variety of barriers apparent. Common barriers arise from the high cost of services or unavailability of local services compounded by distance [3]. Other barriers relate to inequitable policies, such as those that provide differential access to contraceptives according to marital status [3]. Lack of knowledge about what services are provided, lack of privacy and lack of suitable facilities are other common barriers [9]. A number of trials indicate the effectiveness of providing information to young people when combined with approaches that actively engage them with health services, supported by health professional training. Most examples relate to sexual and reproductive health care. In Shanghai, China, the provision of educational materials including videos, pamphlets, small group education and lectures around a variety of sexual and reproductive health themes resulted in a 14-fold increase in the likelihood of unmarried young people using contraception at first sexual intercourse [10]. So too in Zimbabwe, a multimedia campaign pro-
moting sexual and reproductive health knowledge that involved radio, posters, community events, peer educators and leaflets brought substantial changes in health service use and an increased likelihood of contraceptive use [11].

Acceptability

Stigma and fears about lack of confidentiality are major barriers in many parts of the world. Many young people fear that health workers will not maintain confidentiality and will provide information to parents and other family members [3, 4, 9, 12]. In many parts of the world, such fears about health professionals are well founded, as there is widespread lack of training about the importance of confidentiality for adolescents. Yet, for many adolescents, privacy and confidentiality is their major concern, and they are unlikely to return to a health provider if their parents are told about their attendance [13]. Young people similarly avoid seeking health care for fear of being scolded and humiliated by hostile providers [14]. So too, sensitivity about being identified attending health services, particularly those for highly stigmatized conditions such as HIV/AIDS, STIs, mental disorders and obesity can be profound [15]. Misinformation in the general community may further contribute to stigma. For example, widespread community attitudes that HIV-positive status implies that a young woman must be a sex worker is a barrier to the acceptability of attending for treatment and reluctance to be seen taking medication. Thus, while youth-friendly health care may be provided, without additional strategies to change community attitudes, the level of access and acceptance of services may not improve [16].

Appropriateness

There is much evidence to suggest that many health services fail to provide confidential and nonjudgmental health care, which commonly leads to a reluctance of young people to return for further treatment or preventive care. Three main approaches have been employed in improving the appropriateness of health service providers: provision of guidelines, provider training and quality improvement strategies that generally also include health provider training [3]. An important aspect of guidelines for adolescent services of any type is the need to make clear to health care providers that moral judgments about behaviors, including those outside cultural norms, are unacceptable. So too is the denial of services on the basis of such moral judgments. While clear guidelines are a necessary element of an effective response, there is little evidence that guidelines
alone bring about change in health care provider capacity. In contrast, there is
good evidence that training of primary care practitioners can bring about sub-
stantial changes in the provision of more adolescent-friendly health care. Trials
of training general practitioners have demonstrated major improvement in their
objectively assessed knowledge and clinical skills after 6 sessions about adoles-
cent development, communicating with young people and providing confiden-
tial health care [17]. So too, a trial of brief training for primary care nurses
brought about changes in health risk behaviors in adolescent patients [18]. Some
impressive changes in primary care have come from implementing more system-
tatic quality improvement strategies. A cluster randomized trial in a high-
income setting that consisted of leadership engagement, data to demonstrate
gaps in best practice, the development of an action team, development of prac-
tice-specific solutions and monitoring of progress brought about a tripling of
STI screening in adolescent girls and a substantial reduction in prevalence of
STIs in the intervention clinics [19].

In summary, a critical challenge in providing adolescent-friendly health care
is to make health services more accessible, acceptable and appropriate for ado-
escents. Table 3 provides a list of strategies to improve the quality of health care
provided to adolescents by healthcare facilities that variously target the commu-
nity, the healthcare facility, and health service providers.

Platforms for Health Service Delivery to Adolescents

Face-to-Face Clinical Care

Adolescents place great value on the reliability of information provided by doc-
tors and other health professionals. A particular challenge for face-to-face clin-
ical services is, however, the gap between the burden of disease experienced by
adolescents and the health issues they present with to health services. Thus,
rather than presenting with concerns of emotional distress, self-harm and
mental disorder, underweight or overweight, or sexual health risks such as un-
safe sexual behaviors, young people more typically present with acute health
needs such as sprains and soft tissue injuries, acute respiratory infections, and
skin complaints.

The initial challenge for face-to-face clinical services is to ‘go beyond the pre-
senting complaint’ to identify the potential scope of health issues affecting any
individual adolescent [20]. This can be achieved by routine psychosocial assess-
ment which can only be completed with the young person alone, even if some
of the assessment domains have started to be explored with a parent present. The
### Table 3. Strategies for making health services more adolescent friendly

<table>
<thead>
<tr>
<th>Target audience</th>
<th>Example</th>
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| Community       | Engage with community leaders around how to help young people grow up to be healthy and well  
|                 | Advertise the health service in schools and in the community, such as local media accessed by young people  
|                 | Provide targeted outreach to young people who are most at risk (homeless youth, transactional sex workers)  
|                 | Support transport to the clinic |
| Health facility | Involve young people in the health service (e.g. youth advisory committee)  
|                 | Develop access policies respecting sociocultural context (e.g. minimum age, marital status)  
|                 | Provide flexible appointment times (e.g. an after-hours clinic for adolescents in school or work)  
|                 | Clearly indicate fees. If possible, reduce or waive fees for young people who come alone  
|                 | Provide adolescent-appropriate health promotion material (e.g. posters)  
|                 | Consider an adolescent-oriented waiting area  
|                 | Ensure clinic spaces are quiet, private and clean  
|                 | Identify the capacities of the clinic and develop and streamline appropriate referral linkages to other providers  
|                 | Implement policies and practices to ensure commodity supply (e.g. insulin, contraceptives)  
|                 | Simplify access to health care and commodities (e.g. make condoms readily available at the health service)  
|                 | Integrate adolescent health services with existing (or proposed) programs (e.g. school clinics, HPV vaccination in young adolescents is an opportunity for broader health promotion and service delivery) |
| Health service providers | Provide training to all staff (clerical, clinical, transport) around adolescent health and development and the importance of confidential health care  
|                          | Develop policies for all staff that support confidentiality for adolescents accessing the clinic  
|                          | Encourage staff to take a genuine interest in young people's lives  
|                          | Allow adequate time to explore psychosocial issues and to listen to the young person's concerns  
|                          | Communicate health issues clearly and in a nonjudgmental way  
|                          | Assure confidentiality (and exceptions) at each consultation  
|                          | Ensure evidence-based clinical practice using the best available local resources |

Modified from Azzopardi et al. [20].
most common approach to taking a psychosocial assessment is to use the HEADSS schema (table 4) [21]. This is best preceded with a confidentiality statement, such as, ‘I’d now like us to talk about your life more broadly so I can better understand your health needs. In talking about these issues, everything we talk about is confidential, that is, it stays between you and me. There may be some times when we will need to break this confidentiality, such as if you told me someone is hurting you, you are hurting yourself, or you are going to hurt someone. If we need to break confidentiality, I will tell you and we will do this together.’

For whatever health issue, guideline-based care cannot be delivered unless young people themselves are actively engaged in their healthcare and have a positive experience of care. This can be challenging given the stigma associated with, for example, unmarried sexually active girls accessing sexual health commodities such as contraception. Respectfully taking a psychosocial history is as much a strategy to engage with young people to understand what matters to them in their lives as it is about identifying potential health issues. Active engagement helps set expectations around self-management practices (e.g. adherence with treatment), is a prerequisite to behavior change, and a strategy to support future engagement with adult health services (e.g. transition to adult healthcare).

Routine clinical assessments for all adolescents should include measurement of height and weight (including plotting height, weight and BMI on centile charts) and pubertal development including menstrual status in girls. This provides an important entry point for discussions about healthy diet, weight and nutrition, a core aspect of psychosocial assessment in adolescents.

**Primary Care Services**

Most health care for young people will take place in generic health settings, with primary care the most likely place that adolescents seek health care. Community health services typically provide health care to young people within a context of broader health care provision to all ages within the local community. There is no evidence that ‘stand alone’ youth clinics are more accessible or appropriate than generic ‘all age’ services. Indeed, ratings of health services by young people in some low-income countries suggest that some of the least important characteristics of health services relate to services being stand-alone for youth, with greater value placed on confidentiality, cleanliness, friendly staff and short waiting times [13]. It is however expected that specific ‘youth clinics’ within a generic service that are provided at convenient times for adolescents (e.g. after school) could promote greater access to healthcare.
**Table 4. Examples of questions within the expanded HEADSS approach to taking a psychosocial history** [20]

<table>
<thead>
<tr>
<th>Domains to consider</th>
<th>Tips on contextualizing and addressing these domains</th>
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</thead>
<tbody>
<tr>
<td><strong>Home</strong></td>
<td></td>
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<tr>
<td>– Where they live, who with</td>
<td>Physical living arrangements, social and psychological supports available to the young persons are all key to understanding and addressing health conditions, especially chronic conditions (such as mental health). Living arrangements of young people can be quite complex – it is important not to make any assumptions.</td>
</tr>
<tr>
<td>– Housing security (tenure), recent moves</td>
<td></td>
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<tr>
<td>– Physical environment and resources (i.e. electricity, transport, phone)</td>
<td></td>
</tr>
<tr>
<td>– Social environment, key supports</td>
<td></td>
</tr>
<tr>
<td><strong>Education/employment</strong></td>
<td></td>
</tr>
<tr>
<td>– Current education/employment</td>
<td>Education and employment are important determinants of health and well-being. Health status is also a significant determinant of young people’s capacity to engage in education and employment. In addressing this domain, it is important to be sensitive. ‘Telling off’ or ‘scolding’ are rarely effective interventions for young people not in school or employment. Rather, explore possible reasons, identify goals, and work with them to achieve these.</td>
</tr>
<tr>
<td>– Educational performance, literacy and numeracy</td>
<td></td>
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<tr>
<td>– Relationships with peers and superiors</td>
<td></td>
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<tr>
<td>– Employment, finances and financial security/supports</td>
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<tr>
<td>– Future aspirations and needs</td>
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<tr>
<td><strong>Eating/exercise</strong></td>
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<tr>
<td>– Number and nature of meals, and determinants of these</td>
<td>Capitalize the opportunity to address nutrition and exercise: both under- and overnutrition are important determinants of individual and intergenerational health. Avoid using language like ‘fat’, ‘chubby’ or ‘bony’ – young people are sensitive about their weight and body image, irrespective of their body habitus.</td>
</tr>
<tr>
<td>– Body image; satisfaction, are others concerned?</td>
<td></td>
</tr>
<tr>
<td>– Exercise patterns and determinants</td>
<td></td>
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<tr>
<td><strong>Activities</strong></td>
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<tr>
<td>– Activities and interests, including weekends/holidays</td>
<td>Personal, peer and family activities are all important determinants of health. Interests and hobbies may also provide a lever for change (i.e. ability to play sport may be an incentive to take asthma medication). Marginalized youth may have limited supports and friends – it is important to ask questions sensitively.</td>
</tr>
<tr>
<td>– Family contact/shared activities/supports</td>
<td></td>
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<tr>
<td>– Friend/peer networks and supports, including social media</td>
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<tr>
<td><strong>Drugs</strong></td>
<td></td>
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<tr>
<td>– Peer and family substance use</td>
<td>Family, peer and personal drug use all impact on health outcomes and behaviors. Adolescence is a period of experimentation, and drug use is often modifiable. Before asking these questions, reaffirm confidentiality. Asking about family and peer substance use helps normalize and contextualize this. Use this opportunity to provide education and advice around harm reduction.</td>
</tr>
<tr>
<td>– Individual substance use, recent changes</td>
<td></td>
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<tr>
<td>– Effects of substance use and regrets</td>
<td></td>
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<tr>
<td>– Injected substances (blood-borne virus risk)</td>
<td></td>
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<tr>
<td>– Knowledge gaps (education opportunity)</td>
<td></td>
</tr>
<tr>
<td><strong>Sexuality</strong></td>
<td></td>
</tr>
<tr>
<td>– Sexual activity, orientation and identity</td>
<td>Sexual debut is common during adolescence; STIs and unplanned pregnancy disproportionally affect adolescents. Explain why you are asking these questions, and use the opportunity to educate and promote sexual reproductive health and rights. Do not assume that sexual intercourse only occurs within marriage. Be sensitive; sexual coercion is not desired or pleasurable.</td>
</tr>
<tr>
<td>– Concerns around sex (coercion, unplanned pregnancy, STI)</td>
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<tr>
<td>– Contraception and safe sex</td>
<td></td>
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<tr>
<td>– Females: menstrual periods</td>
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<tr>
<td>– Knowledge gaps (education opportunity)</td>
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</table>
School-Based Clinics

Schools have historically provided health education and health promotion to secondary school students, most commonly for sexuality education. Aspects of school climate are now appreciated to have direct impacts on health in addition to the indirect effect on health from continued school engagement [22]. Primary health care services can also be offered on school premises or nearby, providing a direct benefit from ready access. There are few examples of this kind in low-income settings, but these are increasingly relevant given the growing retention within secondary school for girls as well as boys. In high-income settings, such services are often led by nurses and can also include access to general practitioners and mental health providers.

Youth Community Centers

These centers typically provide a range of services for young people including health, accommodation, financial support, legal support, recreation as well as some access to basic education. These services often cater for marginalized and socially disadvantaged groups of young people including homeless young peo-
ple, drug-dependent young people and sex workers. They commonly have an outreach element to provide information around service access to adolescents who are particularly marginalized. They are typically run by youth workers rather than health workers, but are generally well linked to health services where adolescents with specific health needs can be referred. Some offer peer education and youth participation opportunities.

**Tertiary Adolescent Health Centers**

These may provide maternal health services, mental health services or general healthcare for more complex conditions, as well as emergency care, which depending on the presenting problem, can still be an important platform for comprehensive psychosocial assessment given the disproportionate burden of injuries in the young. Some tertiary centers provide drop-in services and also provide specific inpatient services for hospitalized adolescents. In many places, these services offer professional development in adolescent health care as well as having some capacity for research.

**Other Health Interventions**

Immunization programs, such as HPV vaccination for younger adolescents, provide an opportunity to deliver other health-related interventions. A recent systematic review identified interventions that related to health screening (e.g. vision defects, schistosomiasis), health education (e.g. malaria, accessing health care, sexual and reproductive health), skills building (e.g. condom use) and delivery of commodities (e.g. bed nets, vitamin A) [23]. Circumcision programs for teenage boys similarly provide opportunities for other health interventions.

**Media-Based Health Interventions for Adolescents**

Young people are the earliest adopters of information and communication technologies such as mobile phones, the Internet, instant messaging and social networking, a phenomenon seen in LMIC as well as the high-income world. Such media have the potential to profoundly alter health and development through adolescence.

It is of great concern that marketing of unhealthy products and lifestyles (e.g. foods high in fat, sugar and salt, tobacco and alcohol) commonly targets the young [1]. The reach of digital media can rapidly promote attitudes and products to young people across the globe leading to health risks such as obesity, disturbed body image, substance use and self-harm [1].

New social media also provide a powerful mechanism to transform health knowledge and health delivery systems around the globe. Trends around digital...
media use are global, although the means of accessing information varies widely (e.g. mobile phones, personal or public computers). In sub-Saharan Africa, mobile phone growth has meant that digital media are available in even the most remote places, while over 70% of Bangladeshi women of reproductive age have access to a mobile phone within the household [24]. Digital media platforms offer the potential to reach diverse populations of young people, both geographically and in terms of socioeconomic status, and to provide health education confidentially about topics that are of particular interest to individuals. In addition to being tools for health education, there is increasing interest in using these media for health care delivery. While an emerging area of great promise, evidence on the effectiveness of interventions is limited and mixed.

**Internet Interventions**
The majority of available studies using this platform have attempted to provide information about sexual and reproductive health risks. Increasingly, web-based interventions are being trialed for overweight and obese adolescents. For example, a randomized controlled trial tested the efficacy of an Internet-based lifestyle behavior modification program for African-American girls over a 2-year period of intervention, which also included 4 face-to-face counseling sessions. While the web-based behavioral intervention was found to be superior to Internet-based health education after 6 months of treatment, these losses were not maintained during the subsequent 18 months [25].

**Mobile Phone Interventions**
These provide new opportunities for delivering health behavior change interventions. A systematic review of short-messaging service (SMS) for both health promotion and clinical care test messages showed that short-term positive behavior changes were observed in 13 of the 14 reviewed studies [26]. Tailoring of SMS content and interactivity were found to be important in these adult studies, a feature that would be expected to be even more relevant for adolescents. Others have used mobile phones as adjuncts to clinical care through adherence reminders or appointment reminders and to increase physical activity postpartum.

**Social Marketing**
Population-focused social marketing approaches have particular salience in changing community values and attitudes in the young. For example, the South African multimedia ‘edutainment’ program Soul City helped change social norms around HIV/AIDS and domestic violence, contributed to increases in individual knowledge about condom use and domestic violence and more wide-
ly contributed to the empowerment of local communities [27]. Such approaches would also be expected to be effective in changing attitudes to overweight and physical activity within communities. For such interventions to be effective, new skills and coalitions with media experts are required to exploit opportunities for health.

**Integrating Face-to-Face Clinical Care with New Media**

Rather than seeing face-to-face consultations and new media as distinct aspects of healthcare, there are increasingly opportunities for integration of these delivery platforms. A particular advantage of contemporary media is that it provides access to young people about sensitive information that they might otherwise have difficulty accessing within their own communities. However, given the vast amount of information available, it can be challenging for adolescents to weigh up the reliability of information they access. There is every reason that young people will benefit from guidance about how to identify quality health sites which is a new role for families, schools and health professionals.

In the same way, the rise of electronic medical records provides particular opportunities to integrate new media within face-to-face consultations. This includes greater use of electronic health assessment tools, greater use of visual media that health care providers can use within consultations to explain complex health information, and more efficient identification of appropriate health education that adolescents can be directed to access after the consultation (e.g. websites, apps).

In summary, adolescent-friendly health care is a construct that refers to the delivery of quality health care to young people in a manner that provides a positive experience of care for them. It is a construct that embeds health care quality within both a human rights and developmental perspective. Adolescent-friendly health care is not about disempowering parents; throughout adolescence, parents continue to play a critical role in shaping young people’s health and development. However, adolescent-friendly healthcare acknowledges the developmental realities of adolescence in that, across the world, puberty is accompanied by an increasing desire for autonomy and privacy in all relationships, including healthcare, and a growing interest by young people in engaging in meaningful relationships beyond the family. A challenge for all health educators and health services is to ensure that the contemporary workforce is sufficiently skilled to provide adolescent-friendly healthcare to all young people.
Disclosure Statement

Neither author has any disclosure to declare.

References

21 HEADSS – A Psychosocial Interview for Adolescents.