



Implementing HEADS Assessment for 10 to 18 Years Old Adolescents Across Six Government Schools in Qatar: A Pilot National Approach of School Health Program to Improve Adolescent Mental Health

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Abstract

Background: Physical and mental health assessments are frequently conducted exclusively within a health care facility or emergency room, where many teenagers seek routine care, reducing the likelihood of detecting mental health disorders in adolescents. The pilot's principle is to assist adolescents to receive specialist help, when necessary, thereby providing mental health care support within the school setting.

Aim: The purpose of this study was to (i) conduct mental and physical health assessments in six governmental schools using the HEADS (Home, Education, Activities, Drugs, and Suicide) modified scale and (ii) adopt this assessment as a standardized approach for all public schools in Qatar in order to improve adolescents' health and well-being.

Methodology: The study enrolled 45 adolescents from six different public schools. Prior to enrolment, a professional nurse met with the parents to thoroughly discuss the research methodology. Following that, the participants were screened by a professional nurse and then by a psychologist, with the results recorded on an electronic medical recorder. Finally, the psychiatrist performs an assessment of the HEADS data.

Results: A total of 45 assessments were completed during both phases (22 in phase 1 and 23 in phase 2). Following the assessment, each investigated adolescent was referred to a different clinic or department based on the results of their assessment.

Conclusion: Although this study was preliminary, it demonstrated the efficacy of a simple technique for assessing adolescents in school using the modified scale of HEADS. Over a 21-month period, 45 students were assessed and diagnosed with anxiety, depression, and behavioral issues. This emphasis on mental health awareness is consistent with this strategy and would positively contribute to necessary reforms in this area, thereby improving the mental wellbeing of adolescents in Qatar and ultimately resulting in a healthier society.

Keywords: Psychosocial assessment; Depression; School nursing; School health

Introduction

Adolescence is a period of significant physical, psychological, and social transformation [1]. The difficulties associated with transitioning from childhood to adulthood can put adolescents' health at risk. Numerous issues confronting teenagers are related to risk-taking behaviors and psychosocial dysfunction, both of which are recognized as major hazards to adolescent well-being [2]. Unfortunately, doctors frequently miss psychosocial history and preventative counselling during routine medical appointments with adolescents [3,4].

While the need for improved psychosocial assessment of children and adolescents is well acknowledged, the urgency of this issue is heightened in the emergency room, where many teenagers seek routine care [5]. Despite the time constraints and lack of clinical continuity associated with emergency visits, a national survey conducted in the United States discovered that 20% of individuals aged 15 to 24 years present to the emergency department for ambulatory care [6]. Nearly 5% of adolescents in the United States, or 1.5 million children, cite the emergency room as their sole source of primary care [7]. More importantly, frequent emergency room visits are associated with

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worse medical and psychosocial health [8]. Internationally, similar patterns of emergency department utilization have been documented, especially in Canada and Europe [9]. Adolescent patients presenting to emergency departments with mental health concerns are increasing in number [10].

Numerous national guidelines recommend adolescent preventive services in the form of comprehensive psychosocial screening on a regular basis (e.g., Guidelines for Adolescent Preventative Services, Bright Futures, American Academy of Pediatrics, and United States Preventive Services Task Force) [11]. The emergency department is a good location for identifying risk-taking teenagers as individuals who seek primary care in the emergency department have highly sensitive psychological profiles [12]. Suicidal adolescents, for example, are more likely to seek medical attention at the emergency department, and this assistance is frequently requested in the weeks preceding a suicide attempt [13]. Indeed, reliance on the emergency room for regular care has been linked to an increased risk of teenage suicide [14]. Additionally, teenagers who visit the emergency room are more likely to suffer from depression, substance addiction, sexually transmitted illnesses, and physical or sexual abuse [15]. Abused kids frequently visit the emergency room and are considerably more prone to smoking and drinking on a regular basis than their non-abused peers [16]. Homeless individuals, whose lifestyles are frequently marked by poor coping mechanisms, risky behaviors, and self-harming crises, rely significantly on the emergency department as a substitute for primary care [17]. Taken together, these features of frequent emergency department users highlight the critical need to broaden the conventional emergency assessment to include psychological examination of all teenage patients.

School health services cover a range of health care specialists and delivery strategies, including school nursing, school-based health centers, and school-based mental health programs [18]. School-based health care is critical for lowering barriers to health care and reaching adolescents [19].

Reduced evaluation time, an excessive number of patients, a scarcity of referral psychiatric services, and the absence of simple assessment instruments may delay early intervention, which would have a significant impact on morbidity and mortality in adolescence, improving both the individual's and society's prognosis. Implementing physical and mental health assessments in schools is one strategy for enhancing adolescent mental health in Qatar.

Physical and mental health assessments are frequently conducted solely within a health care institution or emergency room, where many teenagers seek routine care, reducing the likelihood of detecting mental health disorders in adolescents. The pilot's concept is to enable adolescents to be referred for specialist help as needed, thereby providing mental health care support within the school setting. This will undoubtedly contribute to the reduction of mental health and physical illnesses among Qatar's adolescents.

Thus, the purpose of this pilot study was to conduct mental and physical health assessments using the HEADS modified scale (Home, Education, Activities, Drugs, and Suicide) in six governmental schools and (ii) to adopt this assessment as a national approach for all governmental schools in Qatar in order to improve the health and well-being of adolescents.

Materials and Methods

Study design

This was a prospective, interventional pilot study including adolescents ranging in age from ten to eighteen years.

The entire investigation was conducted in two phases

Phase I ran from February 2018 to June 2019 and Phase II ran from September 2019 to February 2020.

The study enrolled 45 adolescents from six different public schools. Prior to enrolment, a professional nurse scheduled a meeting with the parents to discuss the research methodology in detail. The adolescent and his or her parents will next sign a consent document. The participants were next screened by a professional nurse and then a psychologist, and the results of the screening were recorded on an electronic medical recorder. Finally, the psychiatrist evaluates the HEADS data (Figure 1).

Following that, each investigated adolescent was referred to a different clinic or department based on the results of their assessment. Figure 2 illustrates the referral process for the Adolescent Health evaluation.

Intervention technique

The HEADS (Home, Education, Alcohol, Drugs, Suicide) questionnaire used in this study was a remodeled version of the original HEADSS (Home, Education, Alcohol, Drugs, Suicide, Sex) psychosocial screening tool. The topic "S", "referring to sex," has been removed for ethical issues related to the customs and traditions of Qatar and Middle East countries in general, since sex is still a forbidden subject, especially for children and adolescent age groups. Indeed, this simplified version was developed to make the parents' consent easier and avoid local ethical issues.

Measurements

Data collection from patient charts was performed by a single, trained assessor using a standardized data collection form. Because of the overt presence of the HEADSS stamp on the intervention phase charts, the assessor could not be blinded to the study phase. Additionally, the assessment is divided into two sections: Physical and psychosocial health. The physical aspect of the assessment is facilitated by a school nurse, whilst the psychosocial aspect is assessed by a psychologist. For this purpose, six nurses and six psychologists were trained to conduct this project.

Ethics statement

The research was approved by the research committee of the Primary Health Care Corporation (PHCC), which is the major government-funded primary healthcare provider in Qatar. All the adolescents and their respective parents enrolled in this study gave informed consent, and patient anonymity was preserved.

Inclusion criteria

The inclusion criteria were adolescents aged between 10 and 18 years old, who attended one of the six enrolled schools, and adolescents who displayed signs and symptoms of potential psychosocial issues or physical health issues.

The pilot was implemented in six government schools

1. Qatar Primary Schools (Boys)
2. Aisha Abe Baker Secondary School (Girls)

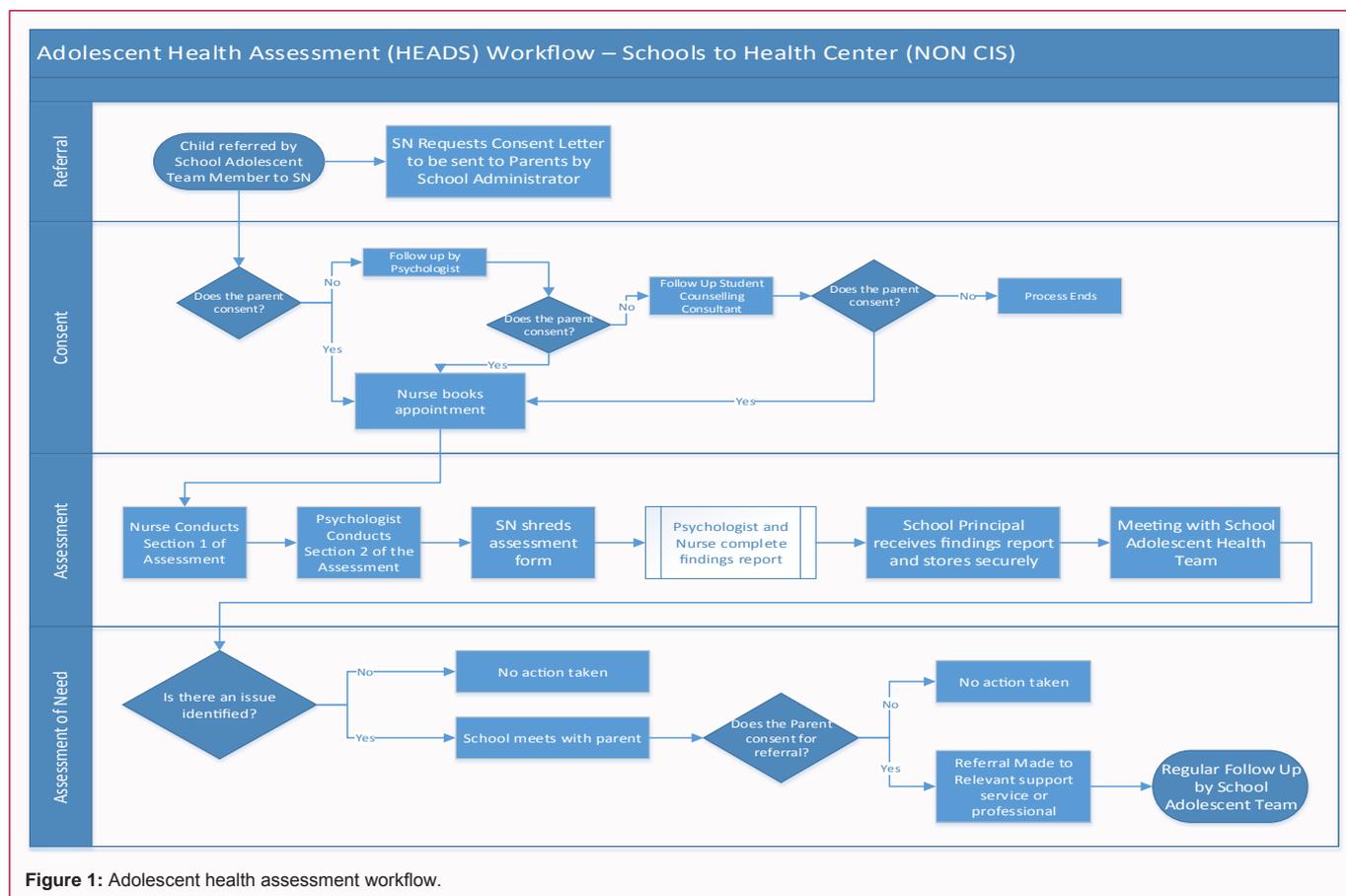


Figure 1: Adolescent health assessment workflow.

3. Ibn Khaldoun Preparatory School (Boys)
4. Ali Bin Jassim Secondary School (Boys)
5. Amna Bint Wahab Preparatory School (Girls)
6. Imamah Bent Hamza Primary School (Girls)

Results

In both phases, a total of 45 assessments were completed (22 in phase 1 and 23 in phase 2). Though the number of schools was only 6, it is suggested that a greater number of assessments could have been achieved over the course of 21 months. The sex distribution of the assessed students during phases 1 and 2 is represented in Figure 3. The highest number of students assessed in total over both phases was Qatari (40.9% in phase 1 and 56.5% in phase 2), followed by Palestinian (13.6% in phase 1 and 4.3% in phase 2) and Sudanese (9.9% in phase 1 and 8.6% in phase 2). The nationality breakdown of assessed students during phases 1 and 2 is represented in Figure 4. Phase 2 also saw a small number of Somali, Egyptian, and Iranian students (1 of each nationality) assessed for the first time.

Discussion

Forty-five adolescents were enrolled in this pilot Qatari national project that strives to improve the mental health of adolescents that attend public governmental schools. To the author's knowledge, this is the first study to implement physical and mental health assessments in public schools with a validated and well-recognized tool of mental health assessment, which is the modified questionnaire of HEADSS (HEADS), and to improve what currently exists for the psychosocial assessment and, therefore, help to build a healthier community.

The HEADS assessment implemented in our pilot study provided an opportunity to involve the student, their parents, and other identified professionals, where appropriate, to coordinate the most suitable package of care for that student. However, since the study is a pilot, the number of enrolled students as well as the number of adolescent students was small.

Indeed, adolescence is a period of fast physical and emotional development. Young people may be overwhelmed by conflicting and perplexing emotions related to changes in their bodily habits, sexuality, and sense of self-worth in relation to family, friends, and society [20]. The majority of teenagers experience few significant physical or psychological difficulties as they transition from childhood to adulthood [21]. However, for some, it may be a perilous period of experimentation with high-risk behaviors while they lack the ability to make solid, safe choices [21]. Additionally, this may be a moment when underlying mental illness or past traumas manifest in overt behavior. According to the 1992 Youth Risk Activity Survey, at least 25% of 12- to 13-year-olds engaged in at least one risky behavior, such as not always wearing seat belts, physical fighting, or tobacco or alcohol usage [22].

Adolescence-onset of these behaviors can result in considerable morbidity and mortality. Additionally, the attitudes and behaviors formed during this period can influence adolescents' future lifestyles and health practices. Injury and violence account for 75% of all adolescent deaths [23,24].

To contribute to a healthier teenage population, health care practitioners must address sensitive topics affecting modern youth's physical and emotional health [25].

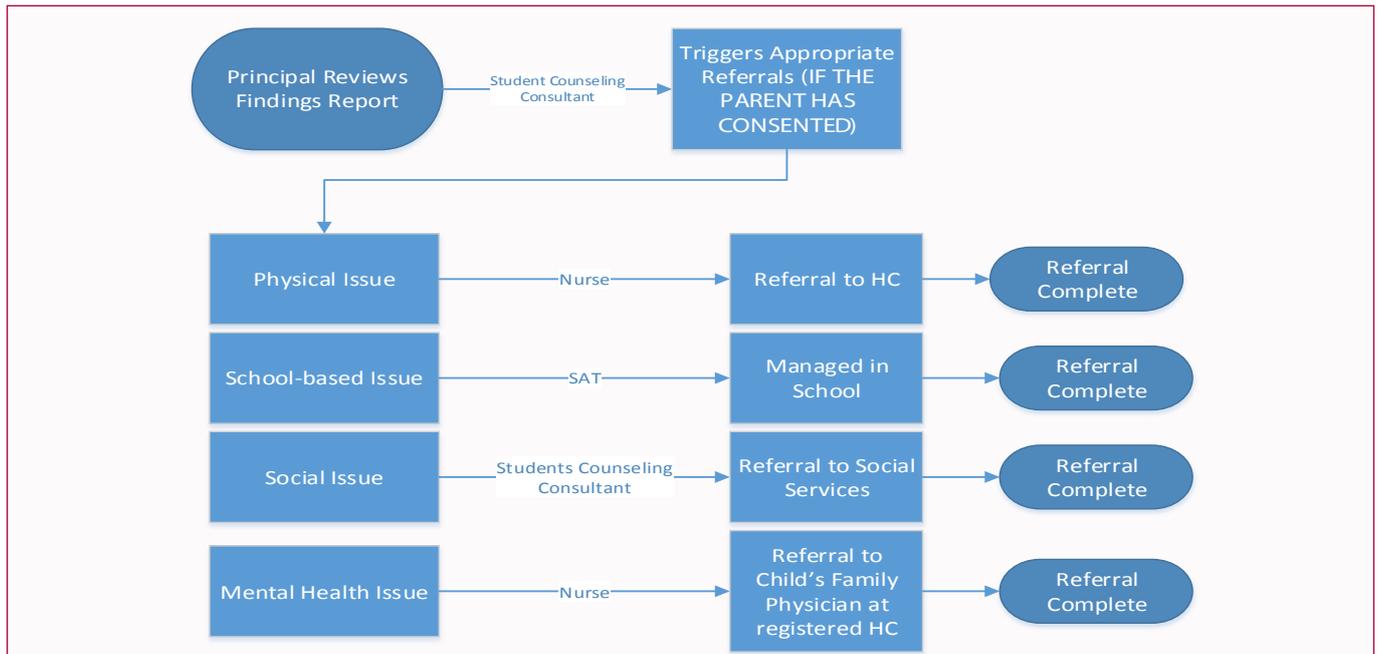


Figure 2: Adolescent health assessment workflow referral process.

Development of adolescence

Many health care providers are unsure when to begin discussing sensitive adolescent concerns [26]. This is frequently a simpler process if a relationship with the patient and their family has previously been developed. Healthcare practitioners can begin educating families about the physical and emotional changes associated with teenage growth and development prior to the onset of puberty [27]. Certain health care professionals send letters to parents detailing how their child's health care visits will change when he or she approaches the age of 10 to 12 [28,29]. As your child approaches adolescence, you can introduce the concept of private, confidential visits. Until both patient and parent are comfortable with the patient being seen alone, introductions and questions should be geared toward the patient. When other family members are present, the patient should be allowed to introduce them and respond to questions about their health and behavior on their own [28,29]. Questions and courtering should be participatory and cognizant of the patient's cognitive level. At this time, it is also critical to emphasize confidentiality [30]. Questions should be appropriate for the patient's cognitive and emotional level. Patients in early adolescence (ages 12 to 14) are more definite in their thinking, self-absorbed, and interested in same-sex interactions [31]. They are also beginning to evaluate their own sexual feelings at this stage. The provider must ask straightforward questions and define concepts such as sex, sexual behavior, and sexual sensations [32,33]. Adolescents in the middle stage (ages 15 to 17) have enhanced intellectual functioning and may begin to understand the repercussions of their behavior [34]. However, many middle-aged teenagers revert to concrete thinking when confronted with perplexing or stressful situations [35]. Additionally, this group is more prone to having an inflated sense of omnipotence and invincibility, which results in risk-taking behaviors. The middle-stage adolescent is frequently more interested in peer group activities than in family activities. It is critical to ask questions about friends, leisure activities, run-ins with the law, and any experimentation with drugs, alcohol, or sexual behavior during this stage [36,37].

Setting the appropriate tone for the interview and acquiring sensitive information requires numerous components [38]. To begin with, parents and teenagers must be informed and assured of the importance of secrecy. The teenager must then be separated from his or her parent or guardian for a period of time to enable quiet discussion of personal matters [38,39]. It is also critical to establish rapport with the adolescent prior to digging into the difficult subject of risk behaviors. Finally, employing pleasant body language and effective interviewing strategies increases the provider's chances of successfully completing a psychosocial test [40]. Indeed, this explains why we chose to train nurses and psychologists prior to participating in the study and contacting the teenagers.

Psychosocial assessment (HEADSS)

The HEADSS is an effective tool for structuring psychosocial interviews and screening adolescents for risky behavior [41,42]. The HEADSS has been successfully utilized in adolescent clinics in a variety of countries [36]. As the purpose of the pilot was to monitor and enhance the mental health of teenagers in Qatar, we chose one of the most widely recognized and widely used tools in the world for adolescent psychosocial assessment.

Home, Education, Employment, Activities, Drugs, Sexuality, and Suicide are abbreviations for HEADSS [36,43]. It begins with nonthreatening questions about family life and evolves to more sensitive and personal inquiries about drug and alcohol experimentation, sexuality, and emotions of depression and suicide. To begin, open-ended inquiries are offered to allow the patient to make inferences about significant concerns [44]. Inquiries concerning a patient's peer group activities and family participation can progressively lead to direct questioning about the health habits and activities of a teenager. If a health care professional suspects a patient is engaging in harmful or risky behavior, he or she should ask more detailed questions [45]. Frequently, a debate about the HEADSS interview devolves into a list of particular questions that should be asked and answered by everyone. To save time, we believe

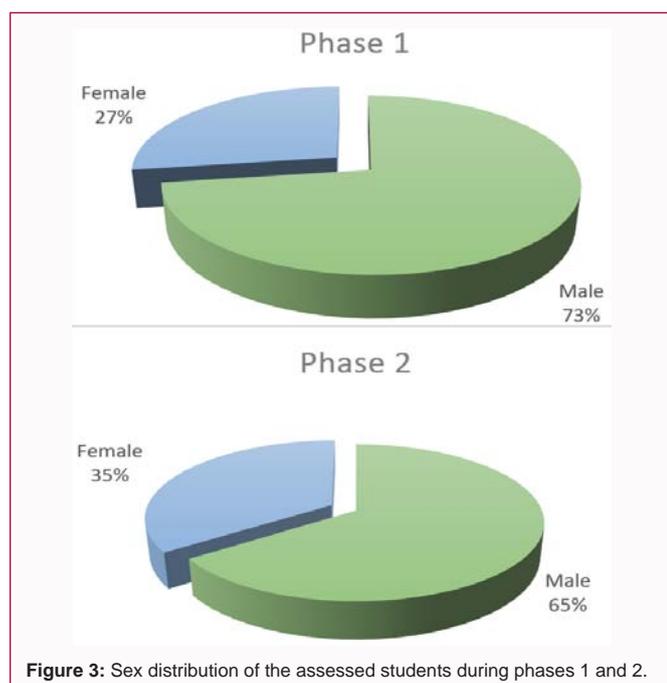


Figure 3: Sex distribution of the assessed students during phases 1 and 2.

that a HEADSS screen can be used to identify those individuals who require more intensive evaluation [45]. We have produced a list of HEADSS screening questions that are reasonably time-consuming to complete [45]. A good response to any screening question necessitates further evaluation. This collection of questions is not intended to be a comprehensive description of an adolescent interview [46,47].

Home

It is critical to precisely describe the house as well as the adults and children who interact with the patient there. We prefer to create pedigree charts that illustrate how everyone is linked [48]. After that, we form a huge circle around all of the folks who share the adolescent's household. Thus, all family links involving the patient are visible at a glance. Other critical questions on the screen concern new members of the home (such as cousins, friends, or stepparents) who may have an effect on the teenager. Finally, questions about an adolescent's sense of safety in their family and neighborhood can reveal issues like physical and sexual abuse or neighborhood violence [49,50].

Employment and education

School is essentially an adolescent's job, and his or her success or failure in this employment has significant consequences [51]. The screening questions in this section are intended to define the applicant's academic record, both past and present. Any favorable responses here should prompt more inquiry into recent academic changes (which may signal substance misuse or mental health difficulties) and motivation. Employment is critical because it indicates motivation, but it may also reflect time spent away from necessary academic preparation [51,52].

Activities

Certain details about activities may have been recorded during the rapport-building process. If not, now is the time to discuss the adolescent's recreational activities [53,54]. The best buddy question identifies loners and teaches your patient problem-solving methods. Screening for delinquency is critical because it might be a sign of underlying mental health or behavioral disorders [54,55].

Drugs

Suspects of drug or alcohol abuse can be identified by asking probing questions about social activities, friends, and academic performance [56]. Often, a parent would provide the first indications by expressing concern about their child's sudden moodiness, isolation, change in friends, or reduction in grades. Alcohol and drug use, particularly when operating a car or swimming, are two of the primary risk factors for serious injury and death in adolescents [57]. Around 20% of all deaths among adolescents aged 15 to 20 are caused by alcohol-related car crashes. Approximately 24% of fatal pedestrian or bicycle incidents involving teens are caused by alcohol. Alcohol is also linked to up to 40% of adolescent drowning incidents [58,59]. Additionally, alcohol abuse has been linked to high-risk sexual behavior and an increased chance of violent behavior. One of the strongest indicators of an adolescent's alcohol or other drug use is the adolescent's best friend's drug use. Adolescents who have friends or siblings who use drugs are significantly more inclined to experiment on their own. Teen drug and alcohol use has been linked to academic failure, antisocial behavior, a lack of social bonds with family, friends, and church, and low self-esteem [60]. The primary care physician can play a critical role in substance abuse prevention by providing early anticipatory guidance, identifying risk factors, and initiating referrals when misuse is suspected.

Suicide

Suicide and homicide are the second and third major causes of death among adolescents, respectively. In the previous decade, the homicide rate has doubled, and the suicide rate has tripled among 10- to 14-year-olds worldwide [61,62], which makes it one of the most critical components to measure when it comes to teenagers' mental health [61].

Sex

Even though this component was removed from our current study due to local ethical concerns, sex is seen as a pioneering component for adolescents' mental health. Several studies have found that slightly more than half of physicians routinely inquire about sexual behavior, reproductive health, and condom use in new adolescent patients [63]. Many primary care physicians believe they are unprepared to deal with these and other adolescent health issues, which contributes to the breakdown in communication [63,64]. Recent modifications to pediatric residency rules try to rectify this predicament [65]. Structured experiences in adolescent medicine, such as didactic and clinical programs in family planning, Sexually Transmitted Disease (STD), and gynecology, must now be included in programs [66]. Regardless of their level of experience, healthcare workers must demonstrate to teenagers that they care about their lives by gathering a comprehensive psychosocial history. Comprehensive teenage health care cannot be provided during a standard 15-min pediatric appointment. A comprehensive history and physical examination of a new teenage patient is anticipated to take between 30 and 45 min, and slightly less for an adolescent getting ongoing care [67]. The US Preventive Services Task Force recommends that physicians obtain a sexual history, address risk prevention, and give confidential treatment to all adolescent patients within legal boundaries during this session [68]. To build good communication skills, practitioners of adolescent health care must develop a sense of comfort and confidence in their ability to tackle sensitive topics such as sexuality, drug and alcohol use, and interpersonal conflict. Furthermore, health care practitioners must be aware of cultural barriers that may obstruct

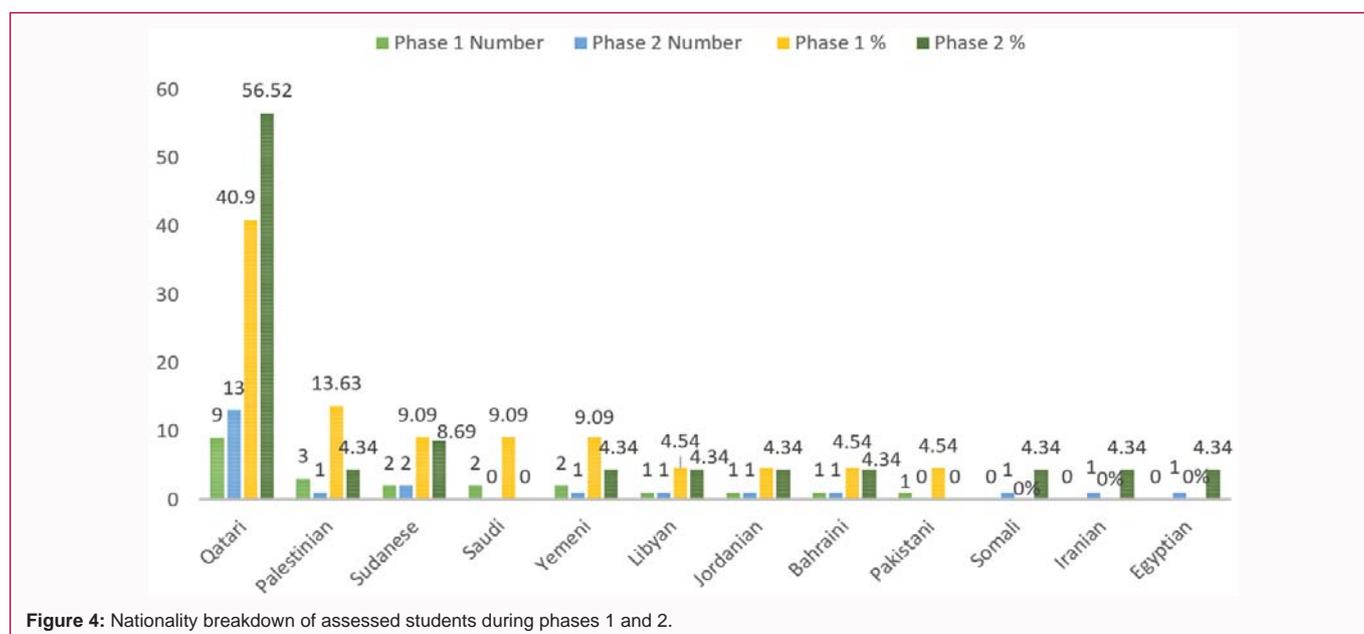


Figure 4: Nationality breakdown of assessed students during phases 1 and 2.

the acquisition of an accurate health history, as well as be able to identify an adolescent at risk of violence, injury, or suicide [69,70].

These findings from this study lend support to the HEADSS paradigm when working with adolescents in any health-care context. Given the study's findings, it is critical to overcome present hurdles to the routine implementation of the standardized HEADSS questionnaire in schools as part of a yearly mental health check.

This will make it easier to conduct adolescent health assessments in a variety of contexts. A stronger emphasis on teenage health will undoubtedly contribute to the development of a healthier society in Qatar.

Implementation of HEADS assessment during the COVID-19 pandemic

The HEADS assessment implemented in our pilot study provided an opportunity to involve the student, their parents, and other identified professionals, where appropriate, to coordinate the most suitable package of care for that student. However, since the study is a pilot, the number of enrolled students as well as the number of adolescent students was small. The authors believe that implementing the HEADS evaluation throughout all public schools will be critical in gaining a better understanding of teenage mental health issues. The COVID-19 pandemic has been proven to have a detrimental effect on individuals' lifestyle behaviors (e.g., physical activity (PA) levels, sleep/wake patterns, and food) and mental health [71-95]. Staying at home during lockdown, quarantine, and online classes, in particular, can have a long-lasting influence on an adolescent's mental health [75,81,85]. As a result, it is critical to use this psychosocial evaluation approach in order to better understand and enhance the mental health of Qatar's young population [85]. This will also contribute significantly to reducing the negative impact of COVID-19 on adolescent mental health.

Limitations

Six significant limitations apply to this study

(i) The accuracy of the data is dependent upon the robustness of the documentation contained in the notes or questionnaire. In

contrast, the questionnaire contains questions covering all domains and is therefore more likely to provide an accurate assessment.

(ii) the information contained in the patient records and the questionnaire was analyzed by a single investigator, minimizing the possibility of inconsistency in the interpretation of the information recorded by the clinical staff conducting the assessments.

(iii) because this is the first study of its sort, both the number of enrolled teenagers and the number of enrolled schools were quite modest.

(iv) utilizing the same investigator to analyze both the retrospective case note review and the prospective use of the standardized HEADS questionnaire adds the possibility of bias in data collection.

(v) the adopted version of HEADS had not previously been validated; even if we kept all of the questions the same and removed the term "sex," this would still need to be validated by other studies.

(vi) proper follow-up of the recruited adolescents was not undertaken.

Conclusion

Although preliminary, this study demonstrated the efficiency of a straightforward technique for assessing teenagers in school using a modified version of the HEADSS questionnaire (HEADS). Over the period of 21 months, 45 students were tested and supported with an issue that could not have been recognized otherwise; this is commendable because they were assessed and diagnosed with anxiety, depression, and behavior issues.

However, the potential to reach many more students and provide them with the necessary support might be significantly higher if the report's difficulties are addressed cooperatively. Notable are the issues mentioned regarding stigma, promotion of mental health awareness, and permission and secrecy.

It is also critical to build on parent comments on referral paths. Collaboration in this area would be tremendously useful and would provide parents, professionals, and the wider population with both

clarity and confidence. The present resources available to Qatar's Ministry of Education and Higher Education to undertake a complete deployment of the project would require further investigation, given the concerns voiced by the former project lead about capacity. Qatar's Mental Health Strategy 2013-2018 and National Health Strategy 2018-2022 are committed to addressing all these challenges and more, and it is encouraging that there is a chance to further address this issue.

This emphasis on mental health awareness is consistent with this strategy and would positively contribute to the necessary reforms in this area, improving the mental health of adolescents in Qatar and resulting in a healthier population in the future.

Authors Contribution

Layla Abdulla ALDAHNAIM, Conceptualization, Data curation, Methodology, Supervision, Validation, Writing – original draft, Funding acquisition. Samya Ahmad AL ABDULLA, Investigation, Methodology, Validation, Writing – original draft, Writing – review & editing, Data curation, Software. Ali BEN SALEM, Investigation, Writing – original draft, Writing – review & editing Writing – review & editing. Amal Yahia ABU ZIAD, Methodology. Ayman Nawwaf ALSAHORY, Methodology, Software, Validation, Writing – review & editing and Ismail DERGAA Conceptualization, Investigation, Methodology, Supervision, Validation, Writing – original draft, Writing – review & editing.

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