Violence chez les jeunes aux pays du Maghreb. Revue systématique.

Youth violence in Maghreb countries. A systematic review.

العنف لدى الشباب في المغرب الكبير: مراجعة منهجية

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RÉSUMÉ

Objectif: Déterminer la prévalence de la violence et identifier ses facteurs de risque ainsi que ses conséquences auprès des jeunes aux pays du Maghreb.

Méthodes: Il s'agit d'une revue systématique. La recherche a été conduite le 2 octobre 2019 sur «Medline» via Pubmed par la requête documentaire suivante: («Violence»[Mesh] OR «suicide»[Mesh] OR «crime victims»[Mesh] OR «Child abuse»[Mesh]) AND («Young Adult»[Mesh] OR «Adolescent»[Mesh] OR «Child»[Mesh]) AND («Tunisia»[Mesh] OR «Algeria»[Mesh] OR «Morocco»[Mesh] OR «Libya»[Mesh] OR «Mauritania»[Mesh]).

Résultats: Au total 16 articles ont été inclus. La majorité était publiée en Ouganda, aux États-Unis et en Angleterre. L'exposition à la violence physique était la plus rapportée (43,8%). Les garçons étaient plus exposés à la violence physique. Cependant, les filles étaient plus exposées à la violence émotionnelle (63% contre 51%). Le taux de suicide a augmenté après la révolution sociale et politique Tunisienne en 2011. Les conflits parentaux, les échecs scolaires et les problèmes sociaux étaient plus fréquents chez les victimes de violence. De même, la consommation de tabac et d'alcool, la toxicomanie et les tentatives de suicide (allant de 5% à 38%) étaient plus élevées.

Conclusion: La violence est devenue de plus en plus fréquente chez les jeunes dans les pays du Maghreb surtout l'exposition à la violence émotionnelle et physique. Il parait donc urgent de mener des futures enquêtes pour fournir des données actualisées sur la violence, en particulier les abus sexuels, afin de mettre en place des stratégies préventives plus efficaces.

Mots-clés: Violence – Suicide - Maltraitance de l'enfant – Enfant – Adolescent – Jeune – Tunisie – Maroc.

SUMMARY

Objective: To determine the prevalence, risk factors as well as consequences of exposure to violence among youth in Maghreb countries.

Methods: This is a systematic review. The documentary request was done on 2 October 2019 and no filters were used. It examined all scientific publications indexed in Medline database via Pubmed using the following search equation: («Violence»[Mesh] OR «suicide»[Mesh] OR «crime victims»[Mesh] OR «Child abuse»[Mesh]) AND («Young Adult»[Mesh] OR «Adolescent»[Mesh] OR «Child»[Mesh]) AND («Tunisia»[Mesh] OR «Algeria»[Mesh] OR «Morocco»[Mesh] OR «Libya»[Mesh] OR «Mauritania»[Mesh]).

Results: A total of 16 articles were included. Most of them (68.7%) were published in Uganda, United States and England. The most common type of violence was physical abuse (43.8%). Adolescent boys were mostly affected by physical violence. However, girls were more exposed to emotional violence (63% vs 51%). The suicide rate increased after the social and political Tunisian revolution in 2011. Parental conflicts, school failure and social problems were more frequent among victims of violence. In addition, tobacco and alcohol use, substance abuse and suicide attempt (ranging from 5% to 38%) were higher.

Conclusion: Exposure to violence, especially emotional and physical, is becoming more frequent among youth in Maghreb countries. There is an urgent need for future survey to provide temporal data about violence, especially sexual abuse, in order to implement more effective prevention strategies.

Key-words: Violence – Suicide - Child abuse – Child – Adolescent - Young adult – Tunisia – Morocco.

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ملخص

الهدف: معرفة مدى انتشار العنف و تحديد اسبابه و عواقبه لدى الشباب في البلدان المغاربية.

الأساليب: أجريت هذه المراجعة المنهجية في 2 أكتوبر 2019 على ميدلاين عبر Pubmed من خلال الاستعلام الوثائقي التالي: ("العنف" [Mesh] أو "الانتحار" [Mesh] أو "ضحايا الجريمة" [Mesh] أو "معاملة مسيئة للأطفال" [Mesh]) و (" شباب بالغ "[Mesh] أو" مراهق "[Mesh] أو" طفل "[Mesh] و (" تونس "[Mesh] أو" الجزائر "[Mesh] أو" المغرب "[Mesh] أو" ليبيا "[Mesh] أو "موريتانيا" [Mesh]).

النتائج: تم تضمين 16مقالة. تم نشر اغلبها في أوغندا والولايات المتحدة وإنجلترا. كان العنف الجسدي هو الأكثر انتشارًا (43.8٪). كان الأولاد أكثر عرضة للعنف البدني و لكن كانت الفتيات أكثر عرضة للإساءة اللفظية (63 ٪ مقابل 51 ٪). زاد معدل الانتحار بعد الثورة الاجتماعية والسياسية في تونس عام 2011. كان خلاف الوالدين و الفشل الدراسي والمشاكل الاجتماعية أكثر شيوعًا بين ضحايا العنف. بالإضافة ، كان التدخين وتعاطي الكحول ، وتعاطي المخدرات ومحاولات الانتحار (تتراوح بين 5 ٪ إلى 38 ٪) أعلى لدى هاته الفئة.

خاتمة: أصبح العنف أكثر شيوعًا بين المراهقين في بلدان المغرب العربي، خاصة التعرض للإيذاء الجسدي والعاطفي. لذلك يبدو من الضروري إجراء دراسات استقصائية في المستقبل لتوفير بيانات محينة عن العنف، خاصةً الاعتداء الجنسي، من أجل وضع استراتيجيات وقائية أكثر فعالية.

الكلمات المفتاحية: العنف - الانتحار - معاملة مسيئةٌ للأطفال - الطفل - المراهق - الشباب - تونس - المغرب.

INTRODUCTION

Exposure to violence by youth is a global public health concern in many developed and developing societies [1]. In fact, youth was historically exposed to many types of violence. However, youth violence is still relevant and underestimated worldwide. Indeed, a large study in the United States (US), showed that exposure to violence by youth is a “national epidemic” [2]. In addition, exposure to violence was associated with higher risk of violence against self than violence against others in both genders of adults [3]. A survey conducted among representative sample in Saudi Arabia (SA) has shown that almost 80% of adults were exposed to violence during the first 18 years of life [4]. It has been shown that exposure to violence increase risk of depression, addictive behaviors and high-risk sexual behaviors among youth [4]. There are various forms of violence and suicide is another common type of active violence. It is considered as the second leading cause of mortality among youth in the world [5]. In fact, there is a well-established relationship between suicide and exposure to violence during adolescence, especially sexual abuse [6]. According to several surveys conducted in countries of the Middle East and North Africa region such as Egypt, Jordan and Tunisia, the prevalence of sexual abuse ranged from 7% to 27% [7].

Nevertheless, there is a paucity of research on aspects and specifics of violence and their impact on youth health in Maghreb countries [8]. It is important to understand contextual risk factors related to youth violence in Maghreb countries. In fact, cultural values and beliefs as well as legal and social services are the most involved in child and youth protection [9]. To the best of our knowledge, no previous systematic review has evaluated violence among youth in Maghreb countries.

The aim of this systematic review was to identify prevalence, risk factors and consequences of exposure to violence among youth in order to understand the dynamics of this phenomenon and to develop effective prevention programs relevant to the context of Maghreb Countries.

METHODS

The present paper is a systematic review. The documentary request was done on 2 October 2019 and no filters were used. It examined all scientific publications indexed in Medline database via Pub Med using the following search equation: («Violence»[Mesh] OR «suicide»[Mesh] OR «crime victims»[Mesh] OR «Child abuse»[Mesh]) AND («Young Adult»[Mesh] OR «Adolescent»[Mesh]

OR «Child»[Mesh]) AND («Tunisia»[Mesh] OR «Algeria»[Mesh] OR «Morocco»[Mesh] OR «Libya»[Mesh] OR «Mauritania»[Mesh]). Four different medical investigators studied selected articles. Then, papers were read by two residents in preventive and community medicine.

We included all articles studying: Exposure to violence by youth (13-24 years). Concerning types of violence, we included: Exposure to violence (physical, emotional violence and sexual abuse) and active violence (suicide and suicidal attempt).

We excluded articles without abstract, not considering people from Maghreb countries, those focusing only on clinical aspect of injuries and articles treating only childhood violence. For each article, information was collected about year of publication, author, type and language of publication, names of journals and country of publication. Aims, methods, results and recommendations were collected and presented preferentially in tabular format.

RESULTS

A total of 16 articles were included in our study (figure 1). Most of them were published in Uganda, United States and England in English language (table 1). The written articles included used, as measuring tool, interviews (face to face / self-report interviews) or medical records of patients. The study design of all included articles in the review was descriptive. The maximum duration in a study was 12 years (table 2).

Prevalence and types of violence in Maghreb countries:

Exposure to physical, emotional violence and sexual abuse:
According to reviewed studies, boys were mostly affected by physical violence. The prevalence of physical violence ranged from 57% to 78% for boys and from 43% to 63% for girls. However, girls were more exposed to emotional violence than boys (63% vs 51%) (table 3A). In Tunisia, 76.2% of youth reported that they were exposed to violence during the first 18 years of life. The most common type of violence was physical violence (43.8%) (table 3A). Concerning sexual abuse, the majority of Moroccan and Tunisian victims (70%) had low socioeconomic status. Moreover, sexual abuse was more frequent among boys (68%) especially before the age of 16 years old. Most sexual abuse episodes were repeated by the same perpetrators (78%), who were men in all cases. Two researches were done in Netherlands to study relationship between ethnicity and prevalence of child sexual abuse, showed a significant lower prevalence rates among Moroccan respondents compared to the native Dutch group (table 3A).

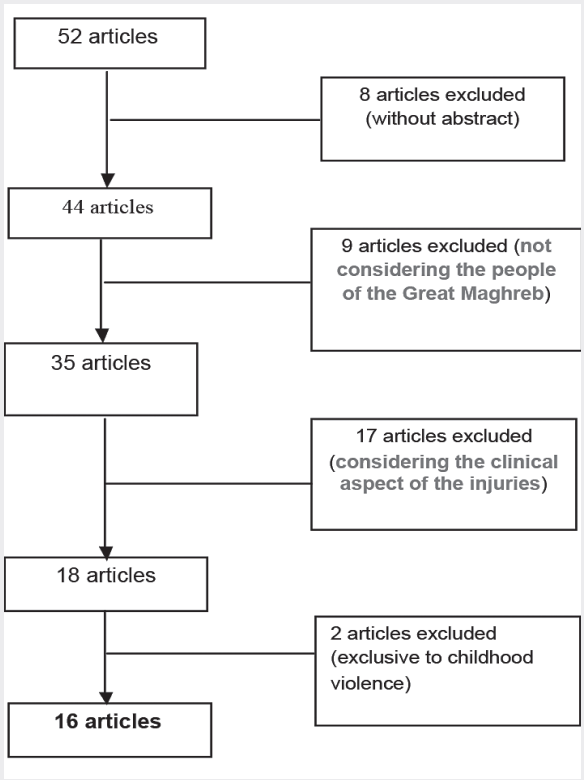

Figure 1. Flow diagram illustrating the selection of articles included in the systematic review about youth violence in Maghreb countries.

Active violence:
Same results in Tunisia and Morocco about ***suicide*** were noted. In fact, the mean age of suicide attempt was between 13 and 15 years old. Medical intoxication was the most frequent method in both countries (ranging from 54% to 78%) (table 4).

Table 1. Bibliometric data of included articles in the systematic review about youth violence in Maghreb countries.

Reference	PMID	Year of publication	First author	Type of publication	Language of publication	Journal's name	Country of publication
13	14693477	2003	Ben Abdelaziz A	Comparative Study	Frensh	Sante	France
17	15351876	2004	Mchichi Alami K	Journal article	English	Arch Womens Ment Health	Austria
24	16352345	2006	Agoub M	Comparative Study	English	J Affact Disord	Netherlands
30	19069612	2008	Van Bergen DD	Comparative Study	English	Crisis	Canada
22	23588629	2013	Amami O	Journal article	Frensh	Tunis Med	Tunisia
15	26090005	2015	Essabar L	Review	English	Pan Afr Med J	Uganda
16	25635895	2015	Okur P	Journal article	English	J child Sex Abus	United States
25	26572129	2015	Zarrouq B	Journal article	English	BMC Psychiatry	England
26	28154629	2016	Oneib B	Journal article	English	Pan Afr Med J	Uganda
27	27642451	2016	Makaoui N	Journal article	English	Pan Afr Med J	Uganda
20	28879455	2017	Mahjoub W	Journal article	English	Forensic Sci Med Pathol	United States
10	28216378	2017	El Mhamdi S	Journal article	English	Prev Med	United States
11	30047613	2018	El Mhamdi S	Journal article	English	Health Soc care community	England
21	29195806	2018	Halayem S	Journal article	Frensh	Encephale	France
9	29413953	2018	Braham MY	Journal article	English	J Forensic Leg Med	England
23	31312316	2019	Charfi F	Journal article	English	Pan Afr Med J	Uganda

Risk factors of violence:

Parental conflicts (ranging from 35% to 45%), school failure (between 13.4% and 86%) and social problems such as low socioeconomic conditions were more frequent among victims of violence. Sexual abuse was associated to parental substance use (11%), absence of one or both parents (17%) and presence of a stepfather (8%).

Socio-demographic risk factors for all suicidal behaviors were: female gender (65%), low family income (93%), middle school level and parents' divorce (11.5%). The suicide rate increased after the social and political Tunisian revolution in 2011 (table 4).

***Consequences* of exposure to violence among youth:**

Smoking, alcohol consumption, substance abuse and suicide attempt (ranging from 5% to 38%) were higher among victims of violence. Especially for females, an association with increased risk of mental health disorders was found (table 3B).

Table 2. Methodology of included studies in the systematic review about youth violence in Maghreb countries.

Reference	PMID	Place and duration of the study	Study instrument	Population
13	14693477	Six public high schools in Sousse (Tunisia), in 1999.	Structured interview.	685 teenagers: mean age = 18 years Sex ratio = 0.68 64% had average income
24	16352345	Urban area of Casablanca, Morocco.	Face-to-face household interviews. The Mini International Neuropsychiatric Interview (M.I.N.I.) according to DSM-IV criteria.	800 adult aged 15 years and above. Sex ratio = 1. 53.1% had 6–13 years of education.
30	19069612	Utrecht in The Netherlands during 5 years.	Self-administered health questionnaire by mail.	249 adolescents (aged 12 to 18).
22	23588629	Psychiatric department "B" of the university hospital Hedi Chaker, Sfax, Tunisia, during 12 years.	The Diagnostic Manual and Statistics of Mental Disorders (DSM-IV) criteria.	61/1623 students: mean age = 19.7 Sex ratio = 0.41. School failure: 72.1% of cases.
15	26090005	During 20 years. Department of pediatric medical emergencies of Rabat children's Hospital (Morocco).	Clinical records of patients.	311 cases of child sexual abuse. 48% of victims were aged from 6 to 10 years.
16	25635895	Between November 2011 and April 2012, in vocational schools and universities of applied science (Netherlands).	A self-report questionnaire.	3697 students aged 18-25 years.
25	26572129	During 1 year at a public secondary schools selected using stratified cluster random sampling in north-Centre region of Morocco.	Anonymous self-administered questionnaire. The Mini International Neuropsychiatric Interview was used to assess suicidality according to the DSM-IV criteria.	3020 students (response rate = 95.2 %). Average age was 16 years ± 2.1 years. 53 % were females.
26	28154629	During 3 years in three health care centers in two cities of Morocco.	The Mini International neuropsychiatric interview.	396 patients (18 years and older). 75% were women.
27	27642451	A period of 3 years in pediatric medical emergencies of Children's Hospital of Rabat (Morocco).	Medical records of patients.	66 victims aged 16 or under; Average age = 13. 93.75% were female.
20	28879455	During 6 years. Department of the University Hospital Ibn El Jazzar of Kairouan (Tunisia).	Autopsy records.	49 autopsied cases, mean age: 15.4 years ± 2.1. Female in 61.2% of cases.
10	28216378	University of Monastir (Tunisia) in 2014.	Validated Arabic version of the Adverse childhood experiences-International questionnaire (ACE-IQ) developed by the WHO.	1200 students. Mean of 22 ± 2.1 years. 75.5% were females. Medical participants (72.4%).
11	30047613	University student population in the faculties in Monastir, Tunisia (Medicine and Paramedical Sciences, Engineering School, and Basic Sciences) from May to December 2014.	Validated Arabic version of the ACE-IQ developed by the WHO, then adapted to the Tunisian context.	1200 young university adults. Mean age 22 ± 2.1 years. 75.5% were female.
21	29195806	Pedopsychiatry department in Razi Hospital in Tunis during 10 years.	Clinical features based on DSM IV criteria.	159 patients, mean age 12.8 years. 71.1% adolescents, 74.2% girls
9	29413953	10 years period in the city of Sousse, Tunisia.	Files handled by the Child-protective services agency.	2212 cases of child abuse and neglect. The average age: 10 years ± 4.4. 56% were males.
23	31312316	1 year period in Pedopsychiatry department in Razi Hospital and Reanimation Department in Tunis, Tunisia.	Suicide Intent Scale and Mini-International Neuropsychiatric Interview.	50 cases. Average age = 12.4 years Sex ratio = 0.56.
17	15351876	Eight prefectures of Casablanca, Morocco.	Direct interview with female population.	728 female aged 20 and over.

Table 3.A. Results about the frequency of exposure to violence among adolescents in Maghreb countries in articles included in the systematic review.

Type of exposure to violence	Reference	Mains Results
***Physical violence**	13	36.9% experienced violence: 78% for boys and 63% for girls.
	10	Females were more likely to report physical violence (69.8% vs 30.2%, p <0 .0001).
	11	Physical violence (43.8%). Males were more likely to have experienced all types of violence in community.
	9	The number of cases increased considerably in 2014 and 2015. Physical violence was more frequent in boys (2% vs 15%). Parents were the most frequent perpetrators (69.7%).
***Emotional violence**	13	51% for boys and 63% for girls.
	10	Males and females reported similar prevalence of emotional violence (9.2% vs 8.8%). Males were more exposed to relationship problems with parents/caregivers (23.8% vs 12.8%, p < .0001).
	9	Emotional neglect was the major type of violence (51.4%) and significantly more frequent in boys (57.3% vs 43).
***Sexual abuse**	13	Sexual violence: 11% for boys and 1% for girls. Repeated violence: 38% for boys and 30% for girls.
	10	Females were more likely to report sexual abuse (22.2% vs 16.4%, p < 0.05).
	9	Significantly more present among girls (30.9% vs 10.1%).
	15	Before 16 years boys were at higher risk (68%). However, victims aged 16 years and older were female (82%). 64% of victims were sodomized, 18% were subjected to fondling and 10% had oral-genital intercourse. Association with physical violence in 21% of cases. Repeated episodes in 67% of cases, by the same perpetrator (78%). Perpetrator's gender: 100% men, 81% non-relative. Incest (16%); by the biological father (75%)
	16	Moroccans reported lower prevalence compared to the native Dutch group (p = .0001). No gender difference. Moroccan girls reported lower prevalence than Dutch girls (p = .0001).
	17	Prevalence 9.2% (n=65 cases). Mean age of the first occurrence of abuse: 14.5±2.3 years. The abuser was known in 56.2% of cases and was a family member in 20.4%.

Table 3.B. Results about Consequences of exposure to violence among youth in Maghreb countries in articles included in the systematic review.

Type of violence	Reference	Main results
***Physical violence**	13	Tobacco and alcohol use (88% vs 46%), substance abuse (21% vs 3%) and suicide attempt (36% vs 17%) were higher among victims (p < 0.0001).
***Emotional violence**	10	Increased risk of addictive behaviours both in male and females by two to three-fold.
	11	Raised risk of tobacco use among victims of violence (54 [18.2%] not exposed to violence vs 135 [45.8%] victims of violence).
***Sexual abuse**	15	Behavioural disorders: anxiety, sleep disturbance and poor self-esteem. Depression, 3 suicide attempts and suicide. Five pregnancies and 2 sexually transmitted infections.
	16	Depressive symptoms (p = 0.03) and vaginismus (p=0.04).

DISCUSSION

Exposure to violence among youth is a common public health concern. This systematic review examined all scientific publications indexed in Medline database via PubMed. The aim was to determine prevalence, risk factors as well as consequences of exposure to violence among youth in Maghreb countries. We found that the most common type of violence was physical abuse (43.8%). Boys were mostly affected by physical violence. The suicide rate increased after the social and political Tunisian revolution in 2011. In addition, addictive behaviors and suicide attempt (ranging from 5% to 38%) were higher among victims of violence.

This systematic review has several limitations that should be discussed. First, our results may be biased because they rely on cross sectional studies with no nationally representative samples. Second, the severity, duration and sequencing of exposure to violence were not assessed. Indeed, the temporal relationship between exposure to violence and consequences cannot be established.

Table 4. Results about active violence among youth in Maghreb countries in articles included in the systematic review.

Type of active violence	Mains Results		
	Reference	Frequency	Risk Factors
*Suicidal attempt	24	Prevalence of suicidal ideation (6.3%), At least one suicide attempt (2.1%).	Non-married status (48%) and history of psychiatric disorders (88.2%).
	30	The highest association: for Moroccan adolescents related to "being afraid to do things wrong" ($p < 0.01$).	A poor locus of control and less ability to discuss problems at home ($p < 0.05$).
	26	2.7% were planned. 6.8 % had a higher suicide risk.	The univariate model: female gender and unemployment; The multivariate analysis: no significant association.
	27	Methods: consumption of pharmaceutical drug (54.4%): anxiolytics (58%) and analgesics (17%).	Psychosis (1case), depression (2cases). Family conflict (35%), school failure and sexual assault (1.5%).
	21	At least one suicide attempt (38%). Method: Drug ingestion (78%), strangulation (10%). Boys by physical methods($p = 0.04$) / girls by medications ($p = 0.001$). Information about suicide from: family (32%), media (22%).	Separated or divorced parents (48%) /psychiatric family history (75%). School failure (86%). Physical abuse (32%), repeated emotional violence (10%), Sexual violence (4%).
	25	Death wishes (26.6 %), suicide ideation (15.7 %). Suicide attempts during the last month (6.5 %). Life time suicide attempts (10.5 %).	Female gender/ Urban locations. Lifetime alcohol use, cannabis consumption (OR = 3.6, $p < 0.0001$) and tobacco use (OR = 1.9, $p = 0.007$).
*Suicide	22	Personal history of suicide attempt: 18% of cases. Average Age of the first attempt: 18.6 years. Regular follow-up in 8.2% of cases.	Family history of suicide: 3.3% / Psychiatric history: 18%. Parental divorce (11.5%), Maltreatment (6.6%), Death of one parent (6.6%).
	20	Rate increased after the social and political revolution (January 14, 2011). Method: hanging (69.38%); for males: self-immolation / females: poisoning.	Family problems (55.1%) and school issues (12.2%).
	23	2012/2015: highest prevalence. Since 2013, physical means: more frequent ($p=0.019$). Since 2014, increase in children compared to the years before (21.6% vs 40.4%, $p=0.012$). Methods: Medical intoxication (68.6%) and physical means (20.1%).	Psychiatric disorders (50.6%), parents abuse (37.1%) and school failure (13.4%)

Third, retrospective self-report and not validated measures may be subject to recall bias due to imperfections in human memory. In fact, we believe that the true prevalence of violence, especially sexual abuse, is underestimated due to under-reporting out of fear and neglect. Lastly, no studies were done in Algeria, Libya and Mauritania.

According to two Tunisian studies conducted among students, 74.8% of the sample reported exposure to violence during the first 18 years of life [10]. The most prevalent reported type of violence was physical abuse (43.8%) [11]. Those frequencies are similar to those reported by adults in the SA. In fact, 80% of them experienced exposure to violence [4]. However, 30.8% were exposed to violence in Sweden. The most prevalent type of violence was emotional violence (24 %) [12].

In 1999, Tunisian boys were more exposed to physical violence (78% vs 63%) and sexual abuse (11% vs 1%). In contrast, girls were more exposed to emotional violence (63% vs 51%) [13]. However, sexual abuse was more prevalent among girls (30% vs 10%) during a 10-year period (2006-2015) in the same region [9]. These finding are in line with studies conducted among adolescents in 14 low income countries in 2017, where boys reported greater exposure to physical abuse [8]. According to a nationally representative research in Zimbabwe, adolescents boys reported prevalence of 76% for physical violence (63.9% among girls) and 26.4% for emotional violence (12.6% among girls) [14].

A study conducted in Morocco, has shown that before the age of 16 years boys were at higher risk of sexual abuse (68%). In contrast, victims aged 16 years and older were female (82%) [15]. Another research carried out in Netherlands, showed that Moroccans had lower prevalence of sexual abuse compared to the native group with no gender differences [16]. A Moroccan survey showed that the prevalence of sexual abuse among 728 females was 9.2% [17]. However, according to a national survey conducted in 2013 in all regions of SA, the prevalence of sexual abuse was 20.8% with significant gender difference: all forms of sexual abuse were reported more frequently by males [7]. In US, 28% of women and 16% of men reported being sexually abused [18]. This huge difference in frequency of sexual abuse across studies might be attributable to differences in measuring tools. Moreover, only few studies were conducted about

sexual abuse (vs almost 146 surveys carried in the US during the last 5 years) because sexuality stills a taboo subject. It oblige youth especially girls to conform to the social rules regarding their behaviors [17]. In the majority of homes and schools, no sex education is given. As a result, most of the sexually abused children in such conservative societies do not talk about their experience as they are scared to be blamed or rejected by their families [7].

In line with previous research conducted in the US, Zimbabwe and low income countries [3,4,9], we found a strong dose response association between exposure to violence and depressive symptoms, suicide attempts and violence perpetration among youth [10]. Addictive behaviors such as smoking, drinking and using illicit drugs were more frequent among victims [11,13]. Same results were found in SA, participants exposed to sexual abuse were three times more likely to have depression, anxiety and mental illness. In addition, those who reported sexual abuse had a higher likelihood of tobacco consumption, substance abuse and suicidal ideation [7]. Moreover, those who have reported sexual abuse were more likely to report genital sores. This suggests that these groups are at high risk for sexually transmitted infections [15].

Regarding suicide, considered as a leading cause of 8.5% of all deaths among adolescent in the world, the prevalence increased and varied across countries [19]. In fact, elevated suicide rates were reported among youth in New Zealand, Finland, and Japan [19]. Consistent with literature, our results shows that Suicide rate increased especially after the social and political revolution in Tunisia (January 14, 2011) [20]. Indeed, the highest prevalence was in 2012 and 2015 [21]. The prevalence of suicide attempt history ranged from 18% to 38% in Tunisia [22,23] and from 6% to 26.5% in Morocco [24–27].

According to age, 65.3% of Tunisian autopsied cases were aged 15 years and older. However, since 2014, an increase of suicide in children aged less than 12 years old was reported (21.6% vs 40.4%, p=0.012) [20,21]. In fact, exposure to violence had a stronger impact on depression for younger adolescents. Older youth may have already developed skills to cope with childhood adversities [2]. This knowledge should alert clinicians about the need of an early and systematically assess of suicidal behaviors among children. According to gender, studies have shown that girls are more likely to report suicide attempt. However, boys are more likely to die by suicide [19,28,29].

Suicidal ideation was positively associated with family and personal history of psychiatric disorders (3.3%; 88.2% respectively), addictive behaviors, and exposure to emotional violence (36.1%) especially parental divorce.

Socio-demographic characteristics such as low family income and school failure were higher among victims. Other prospective cohort studies have demonstrated the unique impact of sexual abuse on suicide among youth, independent of environmental factors [19]. A 2018 meta-analysis by Ng et al, found that sexual abuse is a significant risk factor for suicide attempts [6]. In fact, for both genders, sexual abuse increase sensitivity to depression and susceptibility to adverse environmental influences [3]. Only one survey conducted in Netherlands about suicide among ethnic minority, showed that the highest association with suicidal ideation was found for Moroccan youth due to poor locus of control. Furthermore, Moroccan youth were significantly less able to discuss problems at home [30].

This paper is the first systematic review studying violence among youth in Maghreb countries. Results show that adolescents are at greatest risk of exposure to violence. Indeed, there is an urgent need for future survey with more representative samples to provide data on the accurate magnitude of exposure to violence in Maghreb countries. This study focuses on a major problem in order to develop better understanding of the causal pathways from exposure to violence to disease risk.

Finally, we need to implement more effective prevention strategies (table 5) including:

-Training of general practitioners on reporting early and managing maltreatment in all Maghreb countries, especially for physical violence.

-Enhance psychological and social assistance for children in schools.

- Improving screening of suicidal behaviors among families with low socioeconomic level in rural area.

-Organize educational programs for parents.

Table 5. Strategies of prevention and control in articles included in the systematic review about youth violence in Maghreb countries.

	Family	School	Society
Physical and emotional violence	*Support for families through home visits and education programs for parents are the most effective prevention strategies in developed countries.	*School medical staff can play a crucial role in the prevention of violence. *Increased psychosocial support for youth. *Professionals who come into contact with the child have a priority role in the detection, reporting early and management of maltreatment. *Legal punishment for teachers who are shown to be violent or abusive.	*Improve the socio-economic level. *Launch a comprehensive prevention strategy by addressing the numerous risk factors, cultural norms conducive to abuse.
Sexual violence	*Intra-familial communication.	*Recognize the individual cases of sexual abuse in order to help those involved. *Protect children from being sexually abused especially in countries in which sexuality is still such a taboo subject.	*Practitioners should exercise caution when treating children from different ethnic groups and avoid thinking that ethnic minority groups are at a greater risk.
Active violence	*Parents are supposed to pay more attention to adolescents' risky behaviours.	*The involvement of teachers and school psychologists and workers is essential to identify children at risk and address them for follow up. *Generalization of listening units in schools and universities.	*Strong social support system. *Focus on the role of the media. *Specific laws and regulations concerning dispensing and handling of pesticides. *The exploration of suicidal ideation has to be systematically assessed in mental patients.

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