Physical abuse in basic-education schools in Aden governorate, Yemen: a cross-sectional study

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الإيذاء الجسدي في مدارس التعليم الأساسي في محافظة عدن، باليمن: دراسة مستعرضة آمال صدّيق سالم باصديق، عبد الله سعيد حطّاب

الخلاصة: يؤدي الإيذاء الجسدي في المدارس إلى عواقب تصيب صحة الأطفال مدى حياتهم وتؤثر على أدائهم التعليمي. وقد صمّم الباحثان هذه الدراسة من أجل تقييم معدل انتشار الإيذاء الجسدي للتلاميذ في مدارس التعليم الأساسي في محافظة عدن، باليمن، ولدراسة عوامل الاختطار المرافقة له؛ وهي دراسة مستعرضة شملت 1066 تلميذاً اختيروا عشوائياً من الصفوف السابع وحتى التاسع في ثماني مدارس موزعة على المناطق المختلفة في محافظة عدن، وذلك باستكهال استبيان ينفَّذ ذاتياً، مغفل من الأساء. وقد اتضح من الدراسة أن :/.55 من التلاميذ قد أبلغوا عن تعرضهم للإيذاء الجسدي لمرة واحدة على الأقل في فترة من فترات حياتهم (2.77/ لدى الذكور و2.66/ لدى الإناث) وكان المدرسون هم أكثر المقترفين للأذى الجسدي (45.4/). ووجد الباحثون ترابطاً يعتد به إحصائياً بين الإيذاء الجسدي وبين كلٍّ من الجنس، والمجموعة العمرية، وتعلَّم الأدى الأب. وكانت المنات التي يُعتدَّ بها إحصائياً بالإيذاء الجسدي وفق المتعدد المتغيرات هو جنس الذكورة (معدل الأرجحية = 7.87)، ونمط الأسرة، ونع الأب. وكانت المنات التي يُعتدَ بها إحصائياً بلايذاء الجسدي وفي المتعدد المتغيرات هو جنس الذكرورة (معدل الأرجحية و 7.87)، ونمط الأسرة، ونعلُّم الأب. وكان المدسون هم أكثر المقتر فين للأذى الأب. وكانت المنات التي يُعتدَ به إحصائياً بالإيذاء الجسدي وبين كلٍّ من الجنس، والمجموعة العمرية، ونمط الأسرة، وتعلُّم الأسرة الموسعة (معدل الأرجحية = 1.60). ويرى الباحثون أن الإيذاء الجسدي في مدارس التعليم الأساسي يتطلب اهتهاماً جدياً من قبل السلطات الأسرة الموسعة (معدل الأرجحية عاد].

ABSTRACT Physical abuse in school has lifelong consequences affecting child health and educational achievements. A study was designed to assess the prevalence of physical abuse experienced by pupils in basic-education schools in Aden, Yemen, and to examine the risk factors associated with it. A cross-sectional study covering 1066 pupils in 7th–9th grades from 8 schools in different districts of Aden governorate were randomly selected. Answering an anonymous self-administered questionnaire, 55.7% of pupils reported physical abuse at least once in their school lifetime (73.2% of males versus 26.6% of females). Teachers were the main perpetrators (45.4%). A statistically significant association was found between physical abuse and sex, age group, family type and father's education. Significant predictors of physical abuse on multivariate regression were male sex (OR = 7.89) and extended family type (OR = 1.36). Physical abuse in basic-education schools requires serious consideration by educational authorities, families and the community at large.

Violence physique dans des écoles primaires du Gouvernorat d'Aden (Yémen) : étude transversale

RÉSUMÉ La violence physique dans les écoles a des répercussions tout au long de la vie, affectant la santé de l'enfant et ses performances scolaires. Une étude a été conçue pour évaluer la prévalence de la violence physique vécue par des élèves dans des écoles primaires d'Aden (Yémen) et pour examiner les facteurs de risque associés. Dans une étude transversale, 1 066 élèves en classes de septième, huitième et neuvième ont été sélectionnés aléatoirement dans huit écoles de différents districts du Gouvernorat d'Aden. D'après les réponses au questionnaire auto-administré et anonyme, 55,7 % des élèves ont déclaré avoir souffert de violence physique au moins une fois dans leur vie scolaire (73,2 % de garçons contre 26,6 % de filles). Les enseignants étaient les principaux auteurs de violence (45,4 %). Une coorélation statistique significative a été constatée entre la violence physique et le sexe, la tranche d'âge, le type de famille et le niveau d'études du père. Être de sexe masculin (OR = 7,89), et appartenir à une famille élargie (OR = 1,36) comptaient parmi les facteurs prédictifs importants pour la violence physique à l'analyse de régression multivariée. La violence physique dans les écoles primaires requiert toute l'attention des autorités responsables de l'enseignement, des familles et de la communauté dans son ensemble.

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Introduction

Schools play an important role in children's lives [1]. Nevertheless, the school is one setting where abuse of children can occur. A United Nation's study on violence against children revealed a high incidence of violence committed by teachers and school staff as well as by other students [2]. Both physical and psychological forms of abuse in school are reported, usually both together. Several studies have consistently shown that physically abused children have poorer school performance and lower educational achievement than non-abused pupils [3–5]. Physical abuse also has long-lasting effects on mental health, social isolation, criminal behaviour, drug and alcohol misuse, risky sexual behaviour and even obesity, which persist into adulthood [6–9].

Globally, less than 20 of the world's 190-plus countries have as yet prohibited all forms of corporal punishment, and so only 52 million children out of the world's 2 195 million live in countries where the law gives them equal protection from being assaulted. In about 90 countries out of 197 worldwide, corporal punishment is still authorized in schools and other institutions, including at least 7 states in the Middle East and North Africa [10].

A survey carried out in a wide range of developing countries found that between 20% and 65% of school-age children reported having been verbally or physically bullied in school in the previous 30 days [11]. Several family and community-based studies into child abuse conducted in the Middle East reported that teachers were among the perpetrators of physical abuse [12-17]. In Palestine, a study revealed that 32.3% of the participants had been subjected to physical abuse by their teachers [14]. In Egypt, a survey reported that a substantial proportion of boys (80.0%) and girls (61.5%) incurred physical punishment by a teacher during the scholastic year [17]. In Bahrain, corporal punishment was experienced by 23% of girls at a school [15]. In the Islamic Republic of Iran, in Kurdistan province, a study found that 43.3% of the students had been subjected to physical abuse at school [16].

There is a general scarcity of data on child abuse in school settings in developing countries. In Yemen, only 2 community-based studies were found, both reporting extremely high rates of physical punishment experienced by pupils at school (81.7% and 90% respectively) [18,19]. The current study is the first school-based study among pupils to be conducted in Yemen and aimed to assess the prevalence of physical abuse in basic-education schools in Aden. It is expected that it will increase the awareness of the educational authorities, families and the community at large about the magnitude of this problem and the importance of developing appropriate approaches for its control and management.

Methods

Study design and setting

A cross-sectional survey was conducted in 4 randomly selected districts in Aden governorate. The study target was pupils in grades 7, 8 and 9 of basic-education schools during the school year 2009– 10. Children in the ages 12–17 years are usually able to perceive what is and is not abuse within the school context, and are capable of answering a questionnaire and providing reliable information [17,20].

Study population and sample size

The sample size was calculated using the assumed proportion of 0.5 in order to obtain the maximum possible sample size, with a level of confidence 95%, and 0.03, as maximum allowable error. Accordingly, the calculated sample size was 1066 pupils, which was proportionally distributed according to the sex ratio in schools (667 males and 399 females). A multi-stage stratified random sampling was performed. In the first stage, 4 districts were randomly selected. In the second stage, 2 schools from each district also were randomly selected. In third stage, systematic random sampling was applied to select the number of pupils assigned in each grade in the selected schools.

Data collection

Instrument

An anonymous, self-administrated questionnaire adapted from the Arabic version of the International Child Abuse Screening Tool–Children's Institutional Version (ICAST-C) [20] was used for data collection. The first part of the instrument covered questions about pupil's variables (sex, age, school grade, residence), in addition to parents' sociodemographic variables (family type, parents' education and parents' marital status). The second part asked about different items of abuse acts.

To examine the validity and reliability of the questionnaire we conducted a pilot study that covered 60 pupils (30 males and 30 females) from 2 schools not included in the main study, to ensure that the questionnaire items were clear, understandable and culturally acceptable. The validity of the questionnaire was tested using the content validity method, where the questionnaire was reviewed and judged by 3 experts in child abuse from Yemeni universities, to assess each item's readability, clarity and comprehensiveness and to find out if it was socially acceptable. Accordingly, some items were rephrased, and some others were dropped. The reliability of internal consistency for the questionnaire items was tested by entering data from the pilot study and the Cronbach alpha coefficient that was found to be 0.78.

In the final modified version of the questionnaire the pupils were asked: "Have you ever been exposed to any of

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these acts at school?": slapped on your face, beaten on your head, beaten on your shoulder, twisting ear, throwing an object at you, punching, kicking, pinching, hands crushing, standing in a way that hurts, standing outside in the sun, taking food away from you, pulling hair, finger crushing, choking. We explained the questionnaire in detail to the pupils, and asked them to answer yes or no to each item. Those who responded affirmatively were asked how many times they had experienced the abuse act during their school life and who was the perpetrator (teachers or school administrative staff). The rate of physical abuse was calculated by recoding the acts into dichotomous categories (0 = never and 1 = once ormore). A 4-point scale was used to score how often they had experienced each abuse act (0 = none; 1 = 1-2times; 2 = 3-4 times; $3 = \ge 5$ times) [21].

Operational definition

Physical abuse in this study referred to pupils' reports of any act that occurred to them by teachers or other school administrators (school principal, vice principal or other workers) that could potentially victimize them while in school [22]. Physically abused pupils were defined as those who answered positively to one or more of the physical abuse acts.

Ethical considerations

The research protocol was approved by the research committee for postgraduate studies in the Faculty of Medicine and Health Sciences. Several levels of permission were granted before the study could proceed, including official approval from the authority of Aden Education Office and then permission was sought from the districts directors of education, followed by the permission of school principals.

A written informed consent was sent to the pupils' parents describing the nature of the study, its importance and its objectives. It also stated that the data confidentiality would be assured, participation in the study was voluntary and those who refused participation would not lose any rights or privileges. Parents were asked to put their signature if they agree to have their child participate in the survey. About 15% of the parents initially selected did not agree for their children to participate in the survey, and other pupils were substituted to achieve the target sample size. Finally, parental consent was obtained for each pupil who participated in the study.

The pupils' informed assent was taken orally, detailed explanation of the objectives and the importance of the research were provided, and they were assured that all information obtained would be handled confidentially. Pupils were informed that they had the right to decline answering any question and to withdraw from the study at any time. All pupils whose parents gave consent to their participation agreed to participate in the study.

Data analysis

SPSS, version 16 was used for data analysis. Quantitative variables were normally distributed after testing for normality using the Kolmogorov– Smirnov test. Percentages were calculated as summary measure for the qualitative variables. Arithmetic mean and standard deviation (SD) was used to express the quantitative variables. The association between child's characteristics and physical abuse were tested using the chi-squared test. The statistical significant level was set at *P*-value < 0.05.

The multivariate analysis was done by the binary logistic regressions to identify risk factors associated with the outcome (dependent variable), i.e. physical abuse. For the dependent outcome, no abuse was coded "0" and abuse was coded "1". The results were discussed in terms of the adjusted odds ratio (OR) alongside its 95% confidence interval (CI).

Results

Sociodemographic characteristics of the study sample

Table 1 shows the socioeconomic characteristics of the study sample. Male pupils constituted the highest proportion (62.6%). The mean age was 14.0 (SD 1.1) years. Most of the pupils (70.1%) lived in nuclear families. More than 50% of mothers were illiterate or could just read and write.

Prevalence of physical abuse

A total of 594 out of 1066 pupils reported experiencing one or more physical abuse acts during their school life, a prevalence of 55.7%. Teachers were by far the most common perpetrators (45.4% of cases) compared with administrative staff (6.0%), while 4.3% of children reported being abused by both teachers and administrative staff.

As summarized in Table 2 the most common physical abuse act reported by pupils was standing in a way that hurts (40.0%), twisting ear (34.4%) and standing outside in the sun (33.9%). The lowest physical abuse acts experienced by the pupils were choking (4.1%), punching (4.7%) and slapping on the face (8.3%).

There were statistically significant differences by sex. Males were more likely than females to experience all kinds of abuse and this difference was significant for all except 1 type of abuse (Table 2).

Association analysis

As demonstrated in Table 1, the independent variables that showed a significant association with physical abuse were pupils' sex, age group, father's education and family type. Pupils were more likely to experience violence if they were male, of an older age, had an illiterate father and lived in an extended family.

Table 3 displays the variables with significant univariate associations entered into the multivariate logistic regression. The only significant predictors

Variable	Total	Experienc ab	<i>P</i> -value	
	No.	No.	%	
Total	1066	594	55.7	
Pupil's sex				
Male	667	488	73.2	< 0.001
Female	399	106	26.8	< 0.001
Pupil's age group (years)				
12-13	363	176	48.5	
14–15	618	364	58.9	0.002
16-17	85	54	63.5	
School grade				
7	322	173	53.7	
8	366	214	58.5	0.410
9	378	207	54.8	
Mother's education				
Illiterate	264	152	57.6	
Read/write	324	192	59.3	
Basic	177	97	54.8	0.288
Secondary	162	82	50.6	
University	139	71	51.1	
Father's education				
Illiterate	74	46	62.2	
Read/write	281	163	58.0	
Basic	103	63	61.2	0.029
Secondary	202	93	46.0	
University	406	229	56.4	
Family type				
Nuclear	747	393	52.6	0.002
Extended	319	201	63.0	0.002
Parents' marital status				
Married	952	527	55.4	
Separated	21	13	61.9	0.169
Divorced	33	24	72.7	0.109
Widowed	60	30	50.0	

Table 1 Prevalence of physical abuse experienced by basic-education pupils, by personal and family demographic characteristics

for physical abuse remaining in the model were male sex (OR = 7.89; 95% CI: 5.84-10.6) (P < 0.001) and extended family type (OR = 1.36; 95% CI: 1.00-1.84) (P < 0.05).

Discussion

The present study is the first of its kind in Aden governorate to address physical abuse in schools. Covering a representative sample of public basiceducation school pupils it aimed to study the prevalence of physical abuse at school and its associated factors. The study findings revealed that more than a half of pupils (55.7%) had experienced at least 1 abuse act by teachers in their school life. This finding is lower than what was reported from India and Egypt (65% and 72.8% respectively) [17,23]. The lower rate in our study could be explained by the fact that this study covered pupils in basic-education schools in Aden governorate, while in India, the study was a national study and that in Egypt included both basic- and secondary-school pupils.

Physical punishment as a form of discipline for school pupils is still socially acceptable in many communities. Teachers, who may themselves have suffered similar acts as children, might believe that it is normal to use physical force to make pupils better disciplined [24,25]. This applies to many countries in the region, including Yemen [17,26]. Other studies reported that teachers perceived corporal punishment of pupils as a form of social control [24]. However, such interpretations require further investigation.

Abuse by teachers was experienced by 45.4% of children, which is very close to what was reported from India (44.8%) [23], a little higher than what was found in the Islamic Republic of Iran (43.3%) [16] and much higher than that reported from Lebanon (24.7%) [11]. On the other hand, higher rates of physical abuse by teachers were reported by studies from Korea, China and Egypt (62%, 51.1% and 72.8% respectively) [17,27]. The difference in the rates reported in these studies and our findings could be explained by differences in study design and time frame.

The current study revealed that male pupils were more frequently physically abused than females (73.2% and 26.8% respectively). This finding is consistent with other studies [11,17,21,23]. This difference also could be interpreted as an expression of cultural values and norms dominant in traditional societies, where touching the female body is considered impermissible [17]. On the other hand, male pupils are likely to be more engaged in and more permissive to school violence behaviour than females [12]. We believe that both explanations are valid. المجلد التاسع عشر العدد الرابع

Table 2 Distribution of pupils' reported experience of physical abuse, by sex							
Types of physical abuse	Males (<i>n</i> = 667)		Females (<i>n</i> = 399)		Total (<i>n</i> = 1066)		<i>P</i> -value
	No.	%	No.	%	No.	%	
Standing in a hurtful way	296	44.4	130	32.6	426	40.0	0.011
Twisting ear	316	47.4	51	12.8	367	34.4	< 0.001
Standing in the sun	244	36.6	117	29.3	361	33.9	0.086
Beating shoulder	268	40.2	81	20.3	349	32.7	< 0.001
Beating head	260	39.0	35	8.8	295	27.7	< 0.001
Pinching	157	23.5	32	8.0	189	17.7	< 0.001
Crushing fingers	154	23.0	15	3.8	169	15.9	< 0.001
Throwing with objects	128	19.2	39	9.8	167	15.7	< 0.001
Pulling hair	150	22.5	14	3.5	164	15.4	< 0.001
Crushing hands	151	22.6	12	3.0	163	15.3	< 0.001
Taking food away	101	15.1	29	7.3	130	12.2	0.002
Slapping face	80	12.0	9	2.3	89	8.3	< 0.001
Kicking	67	10.0	1	0.3	68	6.4	< 0.001
Punching	50	7.5	0	0.0	50	4.7	< 0.001
Choking	40	6.0	4	1.0	44	4.1	< 0.001

Pupils in older age groups reported higher rates of physical abuse than younger age groups (63.5% of 16-17-year-olds versus 58.9% of 14-15-year-olds and 48.5% of 12-13-year-olds). This finding is

consistent with a study in India [23]. Others explained this difference by the longer lifespan of older children who could have more courage to disclose their experiences [12]. Although there was no significant association between school grade and the prevalence of physical abuse, pupils in higher grades were more frequently abused. A number of studies [17,21,28], reported similar findings. It seems that the relationship between physical abuse

Table 3 Logistic regression analysis o	of personal and family d	emographic characteristi	cs associated with	physical abuse
Variable	Univari	Univariate analysis		iate analysis
	OR	95% CI	OR	95% CI
Pupil's sex				
Female	1.00	Ref.	1.00	
Male	7.54	5.69-9.98***	7.89	5.84-10.6***
Pupil's age group (years)				
12–13	1.00	Ref.	1.00	
14–15	1.52	1.17-1.98**	1.14	0.84-1.54
16–17	1.85	1.14-3.01*	0.88	0.51-1.52
Family type				
Nuclear	1.00	Ref.	1.00	
Extended	1.53	1.17-2.01**	1.36	1.00-1.84*
Father's education				
Illiterate	1.00	Ref.	1.00	
Read/write	1.27	0.76-2.11	0.88	0.49-1.56
Basic	1.07	0.79-1.45	1.27	0.64-2.52
Secondary	1.22	0.78-1.89	0.76	0.41-1.39
University	0.66	0.47-0.93*	1.40	0.80-2.47

P* < 0.05; *P* < 0.01; ****P* < 0.001.

OR = odds ratio; *CI* = confidence interval.

Ref. = reference category.

and school grade were not studied sufficiently, and further investigation is required to better understanding this problem.

Our study showed that pupils living in extended families experienced more physical abuse in school than those in nuclear families. This could be interpreted according to the social learning theory, whereby children in extended families live in more crowded homes, therefore witnessing more family violence, and may also remain outdoors longer hours, observing and imitating aggressive behaviours which affects their relationship with schoolteachers and make them more exposed to physical abuse [29].

The study findings revealed an inverse association between father's educational level and the prevalence of physical abuse. Fathers with lower education levels may be unable to avail themselves of the resources needed for coping with family problems and to avoid abusive relationships; therefore, they resort to violent behaviour to deal with family problems [30]. This morbid environment can negatively affect the children's behaviour and makes them more vulnerable to different types of abuse and violence.

Conclusion

Physical abuse is a major public health and educational problem in basic school education, particularly among male pupils. Children of extended families were more victimized. Teachers stood out as the main perpetrators. Further studies are required to investigate indepth the risk factors associated with this problem, particularly the school and family environment. The educational authorities should take the appropriate measures to promote school safety and to adopt policy that enforces non-violent disciplinary approaches.

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Preventing child maltreatment: a guide to taking action and generating evidence

Preventing child maltreatment: a guide to taking action and generating evidence is a joint publication of the World Health Organization (WHO) and the International Society for Prevention of Child Abuse and Neglect (ISPCAN). It aims to assist governments, NGOs and international agencies to undertake scientifically informed programmes to prevent child maltreatment. The ultimate objective is a world in which all countries routinely implement child maltreatment prevention programmes based on sound epidemiological data and on local experimental studies of what is effective in prevention.

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