Reliability and validity of the "Extended - Hurt, Insult, Threaten, Scream" (E-HITS) screening tool in detecting intimate partner violence in hospital emergency departments in Hong Kong

在香港醫院的急症室以擴大的「傷害、侮辱、恐嚇、叫囂」(E-HITS)篩檢工具偵查暴力虐待親密伴侶的可靠度及有效性

CC Chan 陳子中, YC Chan 陳沃聰, A Au 區美蘭, GOC Cheung 張安柱

Objectives: To assess the reliability and validity of a brief screening instrument, "E-HITS" (Extended - Hurt, Insult, Threaten, Scream), for detecting female intimate partner violence (IPV) in Hong Kong emergency departments (EDs). ***Method:*** Quantitative data were collected from a victim group (n=110) and a control group (n=116). Statistical properties of the instruments were analysed to ascertain its internal consistency, test/re-test reliability, concurrent validity and discriminant validity. ***Results:*** Cronbach's alpha was 0.90 for the E-HITS. Two-week test/re-test reliability was 0.71 ($p<0.001$). Respondents' scores on the E-HITS positively correlated with those on psychological aggression, physical assault, sexual coercion and injury scales, and negatively correlated with the negotiation scale of the revised Conflict Tactics Scale at a statistically significant level. Subsequent Receiver Operating Characteristic (ROC) curve analysis revealed that E-HITS reached a sensitivity of 98.2% and a specificity of 94.8% at a cut-off of 8.5. The overall accuracy of the E-HITS indicated by the area under curve (AUC) in the ROC is 0.991. ***Conclusion:*** These results show that the E-HITS has good internal consistency, test/re-test reliability, as well as concurrent and discriminant validity. The E-HITS is a valid and reliable tool for screening intimate partner violence in Hong Kong EDs. (*Hong Kong j.emerg.med.* 2010;17:109-117)

目的：評估香港急症室以擴大的「傷害、侮辱、恐嚇、叫囂」(E-HITS) 的簡單篩檢工具偵查暴力虐待親密女性伴侶的可靠度及有效性。**方法：**由受害者組別（n=110）及對照組別（n=116）收集數量性的數據，分析這篩檢工具的統計性質，以確定內部一致性，測試 / 再測試的可靠性，一致有效性及差別有效性。**結果：**E-HITS 的克倫巴赫 α 是 0.90，兩星期測試 / 再測試的可靠性為 0.71（$p<0.001$）。回答者 E-HITS 的得分與心理侵略性、身體襲擊、強迫性行為及受傷尺度有正面的相關性，及與「修訂衝突策略量尺」的談判尺度有負面的相關性，而程度在統計上顯著。其後的接收運行特性曲線分析顯示 E-HITS 在截止點 8.5 的靈敏度達到 98.2% 及特異性達致 94.8%。以接收運行特性曲線下面積顯示的 E-HITS 整體準確度為 0.991。**結論：**這結果顯示 E-HITS 有良好的內部一致性，測試 / 再測試可靠性，一致有效性及差別有效性。E-HITS 是香港急症室篩檢暴力虐待親密伴侶的一個有效及可靠工具。

Keywords: Battered women, domestic violence, hospital emergency services, mass screening, spouse abuse

關鍵詞：受虐婦女、家庭暴力、醫院緊急服務、大規模篩檢、虐偶

Correspondence to:
Chan Chi Chung, RN, MBA, DHSc
Tuen Mun Hospital, Accident and Emergency Department, Tsing Chung Koon Road, Tuen Mun, N.T., Hong Kong
Email: c3@netvigator.com

The Hong Kong Polytechnic University, Department of Applied Social Sciences, Hung Hom, Kowloon, Hong Kong
Chan Yuk Chung, PhD
Au Alma, PhD
Cheung On Chu, George, BA(Psy)

Introduction

Intimate partner violence (IPV) is an international concern.[1] It is also a common phenomenon in Chinese communities such as Hong Kong.[2] There is a general consensus in review papers for healthcare providers (HCPs) to contribute to identifying IPV in healthcare settings.[3-6] Many screening instruments have been developed in other countries. However, no effective screening instrument has so far been identified for hospital emergency departments (EDs) in Hong Kong. Therefore, a brief screening tool for HCPs in EDs to identify IPV is crucial. Research is paramount in developing and validating screening tools to identify IPV in the ED.[4]

Purpose

Early identification and intervention in IPV cases is of paramount importance. It is believed that IPV cases can be efficiently identified for possible early intervention if there is a validated screening instrument for IPV in EDs in Hong Kong.[7,8] The objective of this study was to develop a brief local screening tool named "E-HITS" (Extended - Hurt, Insult, Threaten, Scream) for detecting IPV in hospital EDs in Hong Kong.

Literature review

The emergency department is a safe place to screen and initiate intervention for abused women, providing a turning point to break the family violence cycle.[9] HCPs can offer supports to patients in medical, nursing, legal and social terms as well as community-based services to demonstrate their roles as patient advocators, leading the victims away from the violence cycle. Screening for IPV is extremely important, but the screening rate for IPV in EDs has been very low.[8,10] In a systematic review, it was found that the attitude of some HCPs towards screening was not positive enough, with only 53% of the nurses and 33% of doctors favouring routine screening for IPV.[3]

Screening can theoretically increase the identification of IPV cases. However, successful screening is dependent on a number of factors, which include the attitude of the HCPs and the availability of an efficient and effective screening tool. Despite a highly positive attitude of women on screening,[3] the number of IPV cases screened from women attending EDs is not necessarily impressive. A recent study found that ED staff identified the existence of IPV in only 5.8% of visits despite that IPV screening was documented in 30% of the visits.[11]

In the past, a number of tools were developed for the purpose of screening IPV in other countries. One of the most commonly used tools is the Partner Violence Screen (PVS), which is a 3-question instrument with "yes-no" responses. It was developed for screening respondents attending the ED and validated against some accepted tools in the health services in the USA.[12] The PVS was considered a brief and effective tool for EDs since it only takes 20 seconds for the patient to complete.[12,13] The sensitivity and specificity of the PVS were found to be high.

Sherin et al developed a brief domestic violence screening tool called Hurt, Insult, Threaten, and Scream (HITS) for use in family practice settings.[14] The HITS is a 4-item instrument that asks female patients about their experiences with IPV and the frequencies. The four short, simple, and specific items cover the main areas experienced by victims who are abused by verbal and physical aggression by their spouses. Patients respond to each of these items on a 5-point scale: never, rarely, sometimes, fairly often, and frequently. Score values range from a minimum of 4 to a maximum of 20. The cut-off point recommended by Sherin et al is 10.5. Though the HITS is easy for HCPs to administer, it does not cover sexual violence, nor has it been formally validated for patients attending EDs.

Methodology

The research was performed in the EDs of Tuen Mun Hospital (TMH) and Pok Oi Hospital (POH), which are the cluster public hospitals serving a population of more than one million in the western part of the New Territories in Hong Kong. There were around 600 daily

attendances in the ED of the TMH and 250 daily attendances in POH in 2008. The average number of monthly self-reported IPV cases was about 24 (21 female and 3 male) in TMH and about 9 (7 female and 2 male) in POH in 2008.

The E-HITS (Extended HITS) was derived and translated into a Chinese version from the original HITS (Appendix). Since the HITS does not cover sexual violence, for the purpose of this study, we added one more question to detect the presence of sexual violence. The point scales of the E-HITS would be similar to the HITS but the score range would be between 5 and 25.

The face validity of the E-HITS was reviewed and established by a panel of Chinese members including a psychologist, a social worker, a senior physician, a senior nurse, a trauma nurse and a nurse specialist, all of whom had experience in dealing with domestic violence. The usefulness and appropriateness of the items were agreed after critical review. Based on the wordings of the questions, the panel agreed that the items of the E-HITS could measure what the scale purported to measure.

This development process also involved a comparison of this instrument with other well-established IPV screening instruments. The revised Conflict Tactics Scale 2 (CTS2) contains 39 items covering the following 5 areas of interpersonal conflict tactics scales: physical assault, psychological aggression, negotiation, injury and sexual coercion.[15] The CTS2 was also found to have high levels of internal consistency that ranged from 0.79 to 0.95 and determined to be 0.95 to 0.96 in a local study.[16] Scoring in the CTS2 follows eight categories with the score ranges from 0 to 25. The Chinese CTS2 which has been widely used in local studies[16-19] would be used as the gold standard for comparison.

Data collection

Female patients, aged 18 to 60, attending the EDs with stable intimate partners, Cantonese speaking and able to answer questions with stable medical condition were included as the subjects. General adult female patients who were seeking medical attention in the ED with semi-urgent and non-urgent condition after triage nursing assessment and who did not have any IPV experience in the past 12 months were included as subjects in the non-IPV group, whilst victims attending the ED or had been discharged from an ED within three months because of recent victimisation in spousal abuse incidents would be classified as the IPV group. The Chinese versions of the instruments (E-HITS & CTS2) were used in data collection with patient demographic data as backgrounds.

This study would require a total of 220 female patients to achieve 80% power in detecting a significant difference at the 0.05 level.[20] With prior approval granted from the Ethics & Research Committee of the New Territories West Cluster of the Hospital Authority, a convenience sample of quantitative data were collected from 110 IPV victims and 116 non-IPV victims with the help of a set of structured questionnaire through face-to-face interviews by nurses who were specially trained for the purpose of administering the instruments of the study from October 2007 to December 2008. In order to ensure the quality of the interview, the research assistants (RAs) had attended a 3-hour training course given by qualified trainers. The interview procedures were standardised in order to minimise bias of the RAs in the study.

For the purpose of data collection, all respondents were interviewed in a quiet room or isolated corner to ensure privacy. Potential participants would be asked for written consent after verbal explanation of the purpose of the study was given by the RAs in the ED. A written information sheet in Chinese would also be given to the subjects to facilitate their understanding of the research study, future reference, and enquiry.

The Statistical Package for Social Sciences (SPSS) version 16.0 for Windows was used for analysis. Statistical properties of the instruments were analysed in order to ascertain their reliability and validity. Data analysis included the use of t-test and chi-square test to identify if there was any significant difference between the demographic backgrounds of the respondents in the IPV and non-IPV groups.

Cronbach's alpha was used to assess the internal consistency of the E-HITS; Pearson's correlation coefficient was used to examine its test/re-test reliability and concurrent validity with other screening instruments; and discriminant analysis was conducted to assess its discriminant validity.

Results

Background of respondents

The backgrounds and demographic data of the 110 IPV victims and the 116 non-IPV victims are presented in Tables 1 and 2. With the exception of age and family income, there was no significant difference in the two groups. Compared with the non-IPV group, respondents in the IPV group were significantly younger in age and having a lower average family income per month. In addition, the two groups did not differ in terms of education background, employment, marital status, whether they were new immigrants, or receiving Comprehensive Social Security Assistance.

Internal consistency

The internal consistency of the E-HITS was 0.90 as estimated by the Cronbach's alpha coefficient.

Test/re-test reliability

Consistency of the answers by participants to the scale across time was established by administering the same set of questionnaire to the participants in the IPV group about two weeks after their first attendance at the ED of the TMH and POH. For the IPV group, the two-week test/re-test reliability of E-HITS was 0.71 ($p<0.001$).

Concurrent validity

The results presented in Table 3 reveal that the scores of the respondents in the IPV group on the E-HITS and the CTS2 subscales were higher than those in the non-IPV group except in the negotiation subscale of the CTS2. T-test showed that the differences in the E-HITS and the various subscales of the CTS2 between the IPV and non-IPV groups were statistically significant.

In order to assess how well the E-HITS concurred with other established tools for screening IPV, the correlation coefficient of the E-HITS with the CTS2 subscale scores were analysed. The results revealed that the scores of psychological aggression, physical assault, sexual coercion and injury of the CTS2 were positively correlated with E-HITS total, with the Pearson-moment correlation (r) being 0.84, 0.66, 0.52 and 0.45, respectively ($p<0.001$), while that of negotiation was negatively correlated with E-HITS total ($r=-0.44$, $p<0.001$). The results showed that higher scores of E-HITS were associated with different forms of aggression as measured by CTS2, and that the more negotiation between the spouses, the less their conflicts. The results provided evidence to support the concurrent validity of E-HITS.

Discriminant validity

Discriminant validity refers to the power of a tool to differentiate dominantly among individuals known to be either high or low in a given trait. If the E-HITS is a valid and reliable tool, it should be capable of differentiating between those respondents with IPV experience and those not experiencing IPV. To examine the discriminant validity of the E-HITS, two criterion groups were used, one consisting of IPV victims who had attended the EDs due to experience with different degrees of IPV injuries during the period of study and the other consisting of ED attendants without IPV experience.

Table 4 shows the different sets of sensitivity and specificity of the E-HITS as indicated by different cut-off scores, while Figure 1 presents the receiver operating characteristic (ROC) curve of the E-HITS based on the results of this study. At cut-off scores of 7.5 and 8.5, the E-HITS demonstrated accuracy in predicting group membership with sensitivities of 99.1% and 98.2% respectively while the specificities were 88.8% and 94.8% respectively. The area under curve (AUC) of the ROC is 0.991.

Further analysis was conducted with logistic regression. Variables which showed significant difference in the tests of significance were put in the logistic equation to predict whether a case fell on the IPV or non-IPV group. After controlling for differences in age and family income, the E-HITS total can still predict categorical group membership [Exp(B) = 4.5; 95% CI = 2.44-8.30, $p<0.001$] (Table 5).

Table 1. Demographic characteristics of the respondents

	IPV group		Non-IPV group		
	Mean	SD	Mean	SD	t value
Age	36.53	9.09	41.19	9.57	-3.72*
Family income (HK$)	12314.29	7286.68	15945.74	13768.15	-2.34*
No. of months living with spouse	107.85	98.19	114.12	131.93	-0.41
Number of children	1.47	1.09	1.70	1.02	-1.64

*p<0.001

IPV=intimate partner violence

Table 2. Demographic characteristics of the respondents

	Total n=226	IPV group n=110	Non-IPV group n=116	Pearson chi-square	Asymp. Sig. (2-sided)
Education level				3.19	0.67
No formal education	5 (2.2%)	4 (3.6%)	1 (0.9%)		
Primary School	37 (16.4%)	19 (17.3%)	18 (15.5%)		
Form 1 to Form 3	103 (45.6%)	47 (42.7%)	56 (48.3%)		
Form 4 to Form 5	68 (30.1%)	34 (30.9%)	34 (29.3%)		
Form 6 to Form 7	3 (1.3%)	2 (1.8%)	1 (0.9%)		
Tertiary education or above	10 (4.4%)	4 (3.6%)	6 (5.2%)		
Employment status				7.56	0.11
Employed	113 (50.0%)	49 (44.5%)	64 (55.2%)		
Unemployed	113 (50.0%)	61 (55.5%)	52 (44.8%)		
Receiving CSSA					1.00*
Yes	38 (16.8%)	19 (17.3%)	19 (16.4%)		
No	188 (83.2%)	91 (82.7%)	97 (83.6%)		
Conjugal marriage					1.00*
Yes	175 (77.4%)	85 (77.3%)	90 (77.6%)		
No	51 (22.6%)	25 (22.7%)	26 (22.4%)		
Immigrant† (woman)				5.76	0.06
Yes (from China)	50 (22.3%)	32 (29.1%)	18 (15.8%)		
Yes (from other countries)	4 (1.8%)	2 (1.8%)	2 (1.8%)		
No	170 (75.9%)	76 (69.1%)	94 (82.5%)		
Immigrant† (partner)				1.03	0.60
Yes (from China)	11 (4.9%)	5 (4.5%)	6 (5.3%)		
Yes (from other countries)	4 (1.8%)	1 (0.9%)	3 (2.6%)		
No	209 (93.3%)	104 (94.5%)	105 (92.1%)		

*Exact significance (2-sided) of Fisher's exact test

†Immigrant refers to a person who is not Hong Kong permanent resident because of not having resided in Hong Kong for a continuous period ≥7 years. Two respondents in the non-IPV group did not answer these items (n=114).

CSSA=Comprehensive Social Security Assistance; IPV=intimate partner violence

Discussion

Routine screening of women on IPV in healthcare settings is controversial in some review papers.[3,4,21] To screen or not to screen was the question for some people. The published literatures generally support women's acceptance of the idea of being screened for IPV by HCPs and also agree on routine screening as an accepted procedure in healthcare services for abused women in family violence.[3,4,21] In view of the high health care costs in dealing with family violence and the serious consequences of IPV on the society, it is

Table 3. Respondents' scores on the E-HITS and CTS2

	IPV group			Non-IPV group			
	Min	Max	Mean (SD)	Min	Max	Mean (SD)	t value
E-HITS total	6	24	15.16 (4.11)	5	14	5.79 (1.40)	22.66*
CTS2							
Negotiation	0	150	12.44 (24.13)	0	130	46.87 (40.01)	-7.83*
Psychological aggression	0	183	58.24 (41.88)	0	71	5.06 (12.46)	12.56*
Physical assault	0	254	33.85 (39.54)	0	26	0.71 (3.47)	8.68*
Sexual coercion	0	175	14.51 (31.19)	0	25	0.58 (3.00)	4.64*
Injury	0	123	8.71 (13.41)	0	25	0.35 (2.47)	6.41*

*p<0.001

CTS2=Conflict Tactics Scale 2; E-HITS=Extended-Hurt, Insult, Threaten, Scream; IPV=intimate partner violence

Table 4. Sensitivity and specificity of E-HITS in differentiating IPV and non-IPV victims at different cut-off scores

Cut-off score	Sensitivity (%)	Specificity (%)
4.0	100	0
5.5	100	63.8
6.5	99.1	78.4
7.5	99.1	88.8
8.5	98.2	94.8
9.5	93.6	98.3
10.5	83.6	99.1
11.5	79.1	99.1
12.5	72.7	99.1
13.5	60.9	99.1
14.5	51.8	100

E-HITS=Extended-Hurt, Insult, Threaten, Scream; IPV=intimate partner violence

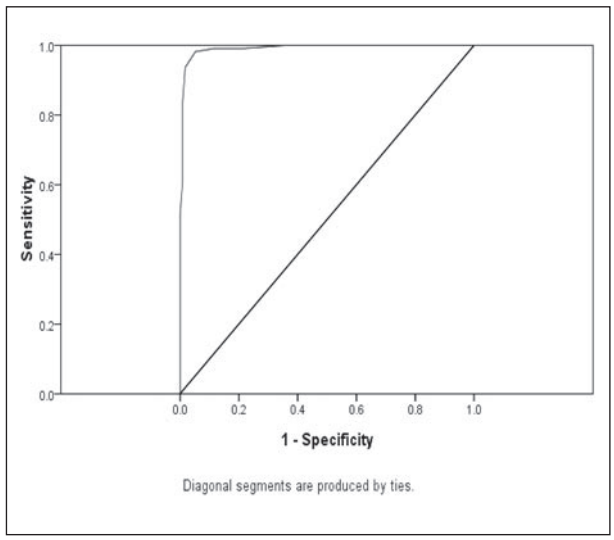

Figure 1. Receiver operating characteristic curve of the E-HITS.

Table 5. Binary logistic regression analysis of age, family income and E-HITS total

	Exp(B)	Significance	95%CI for Exp(B)	
			Lower	Upper
Age	0.96	0.394	0.88	1.05
Family income	1.00	0.199	1.00	1.00
E-HITS total	4.50	0.000	2.44	8.30
Constant	0.00	0.000	--	--

E-HITS=Extended-Hurt, Insult, Threaten, Scream

highly recommended that health care policies be made to implement routine screening of IPV and intervention protocols in EDs.

The development of a screening tool is a prerequisite in the implementation of screening in the ED which is a convenient site for identifying and intervening in cases of IPV. Early identification and intervention are important to reduce family violence, prevent intergenerational transmission, minimise the costs expended by the society, and restore harmonious relationships in families.

Nowadays, studies on the prevalence of IPV are usually carried out with research tools like the CTS2 which are lengthy and requiring a long time to complete. The development of a brief and effective tool is important to fit the tense nature of the ED environment. Information collected from IPV studies throws light on the size and seriousness of the problem. It is important information for the government to set up strategies and policies to deal with and prevent domestic violence in Hong Kong.

The E-HITS is a short instrument developed for screening intimate partner violence in local EDs. It is especially designed for use in EDs in Hong Kong with a short and easily remembered acronym. Other short instruments such as HITS[14] and PVS[12] were also developed for the same purpose in western countries. However, these instruments do not include the area of sexual violence which is a major component in IPV. Other local instruments such as the Chinese versions of CTS2[16] and the Abuse Assessment Screen (AAS)[17] either require a long time to complete or have not been validated in local EDs.

The reliability of a tool is of the utmost importance for it to be used for screening victims with possible IPV for early intervention. Based on the current study, the Cronbach's alpha for the E-HITS is higher than the HITS studied by Sherin et al (0.80).[14] In addition, the test/re-test reliability of the instrument is very high. These results demonstrate that E-HITS has very good internal consistency and is a reliable tool for screening IPV in EDs. The results also show that the E-HITS has good concurrent validity with the CTS2. The findings found that if a couple is able to resolve their conflicts through negotiation, the possibility of IPV should be lower.

This study also attempts to examine the discriminant validity of E-HITS. As shown in Table 3, the mean score of E-HITS of the IPV group was significantly higher than that of the non-IPV group. The sensitivity of E-HITS was also higher than the HITS (88%[22] & 96%[14]), PVS (64.5% & 71.4%)[12] or the Chinese AAS (>89%).[17] The specificity of the E-HITS was higher than all other instruments except Sherin et al's study (97%).[14] Compared with these studies, the discriminant power of the E-HITS is close to or better than that of the HITS. Though the E-HITS is a bit longer than the other instruments, it covers sexual violence which other instruments do not. The content of the E-HITS is more conceptually comprehensive than the other tools. More importantly, E-HITS is the first instrument developed in local EDs for the Chinese community with high measurement accuracy. Based on the findings of this study, it seems that the E-HITS is at least a comparable tool to HITS in detecting IPV.

It is crucial to ensure privacy while performing the E-HITS. However, some EDs may not be able to provide such facilities. It can be dangerous for the women to complete the E-HITS without privacy assurance. Therefore, if it is not feasible to provide immediate privacy in the triage station, the patient should be given the E-HITS once they are in the examination room or during the time when the HCPs are caring for the patient alone. The E-HITS can be used by new ED staff with its easy-to-memorise acronym for "Hurt, Insult, Threaten, Scream" with the addition of "Sexual", allowing them to be familiar with the screening process. It takes only less than a minute to complete. This will be an advantage for healthcare services planning to develop a routine screening strategy of IPV in Hong Kong.

Limitations

This study is limited to Chinese-speaking patients from one district in Hong Kong (New Territories West) which is inhabited by a relatively larger proportion of lower socio-economic class families and new immigrants. Besides, the EDs in which the present study was carried out are public hospitals which have likely excluded relatively well-off attendees. These two facts suggest that the results may be more applicable

to Chinese-speaking women victims of lower socio-economic class families. It seems that for a more comprehensive evaluation of the applicability of the E-HITS in screening for IPV in Chinese societies, studies on different Chinese populations are needed.

There are also limitations as related to the timing of data collection and environmental factors in the EDs. Future research using randomised control trial design could minimise bias in the convenient sampling and achieve a high level of evidence that would be useful to healthcare policymakers in Hong Kong.

Conclusion

With regard to its good sensitivity and specificity, the E-HITS can definitely be used for IPV screening of female patients in hospital EDs in Hong Kong.

Declaration

It is declared that part of the work of this paper will be submitted by the first author to the Hong Kong Polytechnic University for academic purpose.

Acknowledgement

We would like to express our greatest gratitude to the patients who took part in this study and the hard work of the colleagues in TMH and POH who assisted in the data collection process. We also thank Dr. CW Kam, Dr. KL Tsui, Dr. Simon Tang, Dr. KL Ong, Ms. Stella Wong, and Mr. Terris Yau for their supports in this study. Last but not least, we are grateful to Dr. Kevin Sherin, original developer of HITS, for granting us permission to use the original version in the study.

References

1. World Health Organization. Violence against women: a priority health issue (information pack). Geneva: WHO Department of Women's Health and Development; 1998.
2. Tang CS. Wife abuse in Hong Kong Chinese families: a community survey. J Fam Violence 1999;14(2):173-91.
3. Ramsay J, Richardson J, Carter YH, Davidson LL, Feder G. Should health professionals screen women for domestic violence? Systematic review. BMJ 2002;325(7359):314.
4. Anglin D, Sachs C. Preventive care in the emergency department: screening for domestic violence in the emergency department. Acad Emerg Med 2003;10(10): 1118-27.
5. Wathen CN, MacMillan HL. Intervention for violence against women. JAMA 2003;289(5):589-600.
6. MacMillan HL, Wathen CN, Jamieson E, Boyle M, McNutt LA, Worster A, et al. Approaches to screening for intimate partner violence in health care settings: a randomized trial. JAMA 2006;296(5):530-6.
7. Lau CL, Ching WM, Tong WL, Chan KL, Tsui KL, Kam CW. 1700 victims of intimate partner violence: characteristics and clinical outcomes. Hong Kong Med J 2008;14(6):451-7.
8. Chan EK. Screening for intimate partner violence in emergency departments [Commentary]. Hong Kong Med J 2006;12(4):322-3.
9. Maina G, Majeke S. Intimate partner violence in Kenya: expanding healthcare roles. Nurs Stand 2008;22(35):35-9.
10. Terebelo S. Practical approaches to screening for domestic violence. JAAPA 2006;19(9):30-5.
11. Kothari CL, Rhodes KV. Missed opportunities: emergency department visits by police-identified victims of intimate partner violence. Ann Emerg Med 2006;47(2):190-9.
12. Feldhaus KM, Koziol-McLain J, Amsbury HL, Norton IM, Lowenstein SR, Abbott JT. Accuracy of 3 brief screening questions for detecting partner violence in the emergency department. JAMA 1997;277(17):1357-61.
13. Halpern LR, Susarla SM, Dodson TB. Injury location and screening questionnaires as markers for intimate partner violence. J Oral Maxillofac Surg 2005;63(9):1255-61.
14. Sherin KM, Sinacore JM, Li XQ, Zitter RE, Shakil A. HITS: a short domestic violence screening tool for use in a family practice setting. Fam Med 1998;30(7):508-12.
15. Straus MA, Hamby SL, Boney-McCoy S, Sugarman DB. The Revised Conflict Tactics Scales (CTS2): development and preliminary psychometric data. J Fam Issues 1996;17 (3):283-316.
16. Chan KL, Chiu MC, Chiu LS. Study on child abuse and spouse battering. Hong Kong: Department of Social Work and Social Administration, and The University of Hong Kong; 2005. [cited 2009 Sep 30]. Available from: http://www.swd.gov.hk/en/index/site_pubsvc/page_family/index.html.
17. Tiwari A, Fong DY, Chan KL, Leung WC, Parker B, Ho PC. Identifying intimate partner violence: comparing the Chinese Abuse Assessment Screen with the Chinese Revised Conflict Tactics Scales. BJOG 2007;114(9):1065-71.
18. Tiwari A, Leung WC, Leung TW, Humphreys J, Parker B, Ho PC. A randomised controlled trial of empowerment training for Chinese abused pregnant women in Hong Kong. BJOG 2005;112(9):1249-56.
19. Chan YC, Au ML, Lam LTG, Chung KW. Intimate partner violence in Hong Kong: findings from a territory-wide telephone survey. J Psychol Chin Soc 2006;7(2):127-44.
20. Hintze J. NCSS and PASS (Version 2002). Kaysville, Utah: NCSS Statistical & Power Analysis Software; 2002.
21. Nelson H, Nygren P, McInerney Y, Klein J. Screening women and elderly adults for family and intimate partner violence: a review of the evidence for the U.S. Preventive Services Task Force. Ann Intern Med 2004;140(5):387-96.
22. Shakil A, Donald S, Sinacore JM, Krepcho M. Validation of the HITS domestic violence screening tool with males. Fam Med 2005;37(3):193-8.

Appendix.

(E-HITS: Chinese Version)

親密伴侶暴力受害者調查

請圈上妳的親密伴侶於過去十二個月內有沒有對妳作過以下事情：

1. 請問妳的伴侶於過去十二個月內有沒有傷害妳的身體？
   1. 從來沒有
   2. 很少有
   3. 有時有
   4. 時常有
   5. 很多時有

2. 請問妳的伴侶於過去十二個月內有沒有用說話侮辱妳？
   1. 從來沒有
   2. 很少有
   3. 有時有
   4. 時常有
   5. 很多時有

3. 請問妳的伴侶於過去十二個月內有沒有恐嚇會傷害妳？
   1. 從來沒有
   2. 很少有
   3. 有時有
   4. 時常有
   5. 很多時有

4. 請問妳的伴侶於過去十二個月內有沒有叫囂或辱罵妳？
   1. 從來沒有
   2. 很少有
   3. 有時有
   4. 時常有
   5. 很多時有

5. 請問妳的伴侶於過去十二個月內有沒有強迫與妳進行性行爲？
   1. 從來沒有
   2. 很少有
   3. 有時有
   4. 時常有
   5. 很多時有

(E-HITS: English Version)

Please circle how ofen your partner did each of these things in the past 12 months?

1. Has your partner ever physically hurt you in the past 12 months?
   1. Never
   2. Rarely
   3. Sometimes
   4. Often
   5. Frequently

2. Has your partner ever insulted you in the past 12 months?
   1. Never
   2. Rarely
   3. Sometimes
   4. Often
   5. Frequently

3. Has your partner ever threatened to harm you in the past 12 months?
   1. Never
   2. Rarely
   3. Sometimes
   4. Often
   5. Frequently

4. Has your partner ever screamed or cursed at you in the past 12 months?
   1. Never
   2. Rarely
   3. Sometimes
   4. Often
   5. Frequently

5. Has your partner ever forced you to have sexual activities in the past 12 months?
   1. Never
   2. Rarely
   3. Sometimes
   4. Often
   5. Frequently