Evaluation Report of Sunflower Seed Community-based Adolescent Health Project (QK Blog)

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Table of Contents

List of Tables

List of Figures

Chapter I – Overview of the Evaluation Study

1.1 Project Definition

'Sunflower Seed' (QK blog) is a community-based adolescent health project in Kwai Tsing District. It joined Kwai Tsing Safe Community and Healthy City Association (KTSCHCA) as a key component in response to the rapidly rising trend of health problems and substance abuse among children and adolescents. Adopting a tripartite model with strong community support, this adolescent health project aims at connecting education, healthcare and social welfare sectors and aligning them with the best interest of children and adolescents in order to better utilise the available community resources and provide quality and sustainable care.

1.2 Evaluation Purpose

Based upon a systematic acquisition of sufficient and appropriate information from various stakeholders of the project, this evaluation intends to provide useful empirically-driven feedback to array of audience including adolescents, schools, service providers, project administers, and sponsors. Evaluation of the project serves two purposes. First, documenting and monitoring the process of implementation during each phase of the study can ensure the targets of the project are sufficiently and appropriately addressed. Second, evaluating the outcome of the project can inform strategies and decisions about continuation, expansion, and revisions of procedures and practice.

1.3 Evaluation Design

The evaluation project randomly sampled three out of the seven participating secondary schools in the QK Project. The three schools selected were Salesians of Don Bosco Ng Siu Mui Secondary School (Ng Siu Mui), Kwai Chung Methodist College (Methodist), and Lions College (Lion). The evaluation sample was selected after the completion of all the relevant procedures and was independent of the QK administration. A mixed method approach were

adopted for this project evaluation, which contains both phase and overall components with an appropriate triangulation method to synthesise information and inform decisions with recommended strategies regarding continuation, expansion, and revision of procedures and practice . The evaluation framework was illustrated in the Table 1.

A. Phase evaluation

    a. Process evaluation will be conducted on the three phases of the project namely, screening, assessment, and referral arrangement, covering ways of delivery, content and involvement/engagement of all stakeholders.

    b. The formative evaluation will address the issues regarding the sufficiency of acquired information and appropriateness of adopted methods and practices.

B. Summative evaluation

    a. Summative evaluation will investigate whether the project leads to demonstrable effect on the pre-defined target outcomes with respect to each phase and the project as a whole.

Table 1 Evaluation framework of QK blog

Action	**Evaluation**
Physical fitness **Life-style questionnaire**	**Screening** Coverage Acceptance Effectiveness
↓	
Data analysis **Prepare student list for assessment**	
↓	
Coordination with schools and NGOs for assessment	
↓	
Assessment **Physical fitness and physical check-up** **HEADSS questionnaire, WHO-5 wellness scale, CRAFT screen, Asset Memory (RBMT) and eye-hand coordination (BO Test)** **Assessment by paediatrician** **Development of care plan with goals** **Motivation interview for high risk youths** **Brief intervention for lower risk youths**	**Assessment** Coverage Acceptance Sufficiency Efficacy
↓	
Referral for further interventions **School social workers / guidance teacher** **NGOs for high risk youth** **CCPSA for high risk for substance abuse** **Psychiatric or Paediatric Clinic**	**Referral and intervention** Appropriateness Compliance Acceptance Effectiveness
Occupational Lifestyle Redesign Programme for Adolescent	
↓	
Reassessment and enforcement at 6-9 months	

Chapter II – Phase Evaluation

The whole QK project could be divided into three phases – screening, assessment, and referral. The screening phase was an in-school screening using self-developed questionnaires. Based on pre-determined criteria, students who seemed to be at-risk would be required to go to the QK Clinic in Tsing Yi for assessment. The assessment phase then take place in the QK Clinic by various healthcare professionals and social workers to assess the adolescents' vulnerability. If a participant was found to be vulnerable in any aspect, he/she would be referred to relevant external parties for follow-up, which was regarded as the referral phase. In this chapter we would evaluate the performance and execution in all three phases one by one.

2.1 Screening Phase

To understand whether the QK Blog has a comprehensive and suitable screening procedure and whether the screening procedure was fully utilised, a series of analyses were performed. Firstly the current screening criteria were being evaluated. Well-established machine learning algorithms were used to compare with the screening criteria currently implemented in QK Blog. Secondly the comprehensiveness and consistency of the screening questionnaire were tested by cross-checking health profiles.

2.1.1 Test of Screening Criteria

Performance of the screening criteria was assessed using sensitivity and specificity measures. Sensitivity measures the proportion of cases as screened out by the screening test over the total number of cases confirmed by the gold standard (which is the actual referral status made after the professional assessments in the QK Blog clinic); specificity on the other hand was the proportion of non-cases which were correctly identified as such. As the rationale of the screening is to include as many cases as possible while maintaining a reasonable low false positive rate, we expect a good screening would have high sensitivity and moderate

specificity.

The original QK Blog screening criteria was successful in achieving these aims. The sensitivity is very high (83.1%) while the specificity is moderate (17.2%).

Table 2 Comparison of screening criteria

	Sensitivity	**Specificity**
Original Screening Criteria	83.1%	17.2%
Logistic Regression	78.5%	12.6%
Support Vector Machine	84.8%	18.1%

To further verify the QK Blog original screening criteria, it was used to compare with two commonly used machine learning algorithms: logistic regression [1] and support vector machine (SVM). [2]

Out-of-sample sensitivity and specificity of the models were computed by using 10-fold cross-validation. [3] During each fold of the cross validation, the training dataset was used to estimate the model parameters as well as the decision threshold. Based on these parameters, a prediction for the validating dataset was made and thus sensitivity and specificity were computed. After 10 folds of cross-validation, mean of the sensitivities and specificities were extracted for performance comparison.

SVM performed the best in both sensitivity and specificity measures but only with a small margin when compared to the original screening criteria. The logistic regression perfumed unsatisfactorily which is likely due to the linear combination of predictors.

Generally speaking, the original screening criteria of QK Blog are satisfactory. Yet it is advisable to explore the possibility of revision in order to further improve the efficacy and efficiency of screening.

2.1.2 Cross-checking of Health Profiles

To crosscheck the consistency and sufficiency among the screening and assessment tests, the

association between health and developmental profile measured in the screening questionnaires (attached in appendix I) and the number of risk symptoms measured in the HEADSS assessment interviews was tested according to the following analysis scheme:

1. Health and developmental profile of students were estimated using latent class analysis (LCA) on the screening questionnaires. The LCA measures the number of latent subgroups with various statistics criteria, such as Bayesian Information Criteria (BIC) and entropy. Then it measures the posterior probabilities of belonging to each class for each student.
2. The association between class membership and number of risk symptoms were then modelled using Poisson regression model to estimate unadjusted and adjusted relative risks.

Table 3 shows the analysis results. The individual profiles of health and development based on screening questionnaires were significantly associated with the outcome of HEADSS assessment interview. When unadjusted for sex and age, students who prone to health problems and students at-risk had on average more symptoms (RR=1.33 and 1.36, $p<0.05$). After controlling for sex and age, the prone to health problem group were no longer significant different from the healthy students group but the significant difference between normal and at-risk groups were still strong (RR=1.34, $p<0.05$). This result illustrates the sufficiency of the screening tests in QK Blog even when compared with the HEADSS assessments.

Table 3 The association of individual profile and the number of health symptoms

Health and developmental profile according to screening questionnaires	**Unadjusted Relative Risk**	**Unadjusted 95% CI**	**Adjusted Relative Risk**	**Adjusted 95% CI**
Normal / Healthy	1	-	1	-
Prone to health problem / Likely to be at-risk	1.33*	1.00 to 1.76	1.25	0.94 to 1.67
At-risk	1.36**	1.06 to 1.74	1.34*	1.04 o 1.73

*Note: ** p<0.01; * p<0.05; CI Confidence Interval*

2.2 Assessment Phase

This evaluation exercise used both structured questionnaires and semi-structured focus group interviews to solicit opinions from students who participated in the QK project. The findings from the focus group interviews helped to illuminate and interpret the results from the questionnaire survey, both of which were reported in this section.

2.2.1 Participants and Procedure

A total of 64 students from SDB Ng Siu Mui Secondary School, Lions College, and Kwai Chung Methodist College were randomly selected from all those who attended the QK Blog screening and assessment for the evaluation. Eleven students could not be reached as they were no longer students of the participating schools. On the days of evaluation, 8 students were absent from school, which resulted in a total of 45 students (80% males) participating in this evaluation. They have gone through both initial screening (in school) and secondary assessment (in QK). The major demographic characteristics were described in the Table 4. During the evaluation process, sufficient time was given to students in order to complete the questionnaire independently. After collecting the completed questionnaires, focus group moderators would organise the interviews with roughly 7-8 students per group followed by a semi-structured interview protocol (Appendix III).

The evaluation questionnaire, which was designed based on the goals and designing features of QK project, aims to collect data on students' attitudes towards a) the project's content design and arrangement, b) participation and experiences, and c) perceived benefits and overall satisfaction. During the interviews, after a small set of opening questions, participants were encouraged to provide details and clarifications regarding their opinions, perceptions and experiences related to QK project. The students' perspectives on how to improve the project were also solicited. Please refer to the Appendix II and III for the details of the questionnaire and interview protocol.

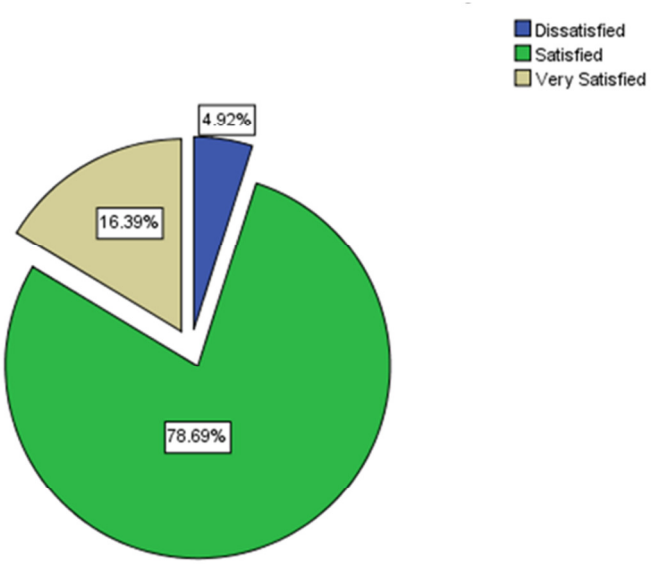
Table 4 Demographic characteristics of informants

Variable	N	Percentage (%)
School		
Ng Siu Mei	13	21.0
Methodist	15	24.2
Lion	17	27.4
Sex		
Males	36	80.0
Females	9	20.0
Age		
≤14	12	26.7
15	7	15.6
16	13	28.9
≥17	13	28.9
Form		
2	10	22.2
3	14	31.1
4	7	15.6
≥5	14	31.1
Total	45	100

2.2.2 Overall Perception of QK Project

In terms of overall perceptions, vast majority (95.1%) of the students were satisfied or very satisfied with the QK project (Figure 1). Female students and students from lower grade levels appeared more likely to have positive overall perceptions than their counterparts, however, the difference did not reach statistical significance ($p<0.05$).

Figure 1 Overall satisfactions of QK Project



During the follow up interviews, student further expressed their overall positive feelings with QK project. Students generally enjoyed the atmosphere in the clinic and communications with professionals.

> *"I would probably in it (the QK Blog) in the future if I'm given the choice. I feel quite relaxed and comfortable in the clinic, especially when talking to the social worker" – Student N*

> *"Yes I think I would go again. The general arrangement seems okay to me and I feel I was cared in the environment." – Student J*

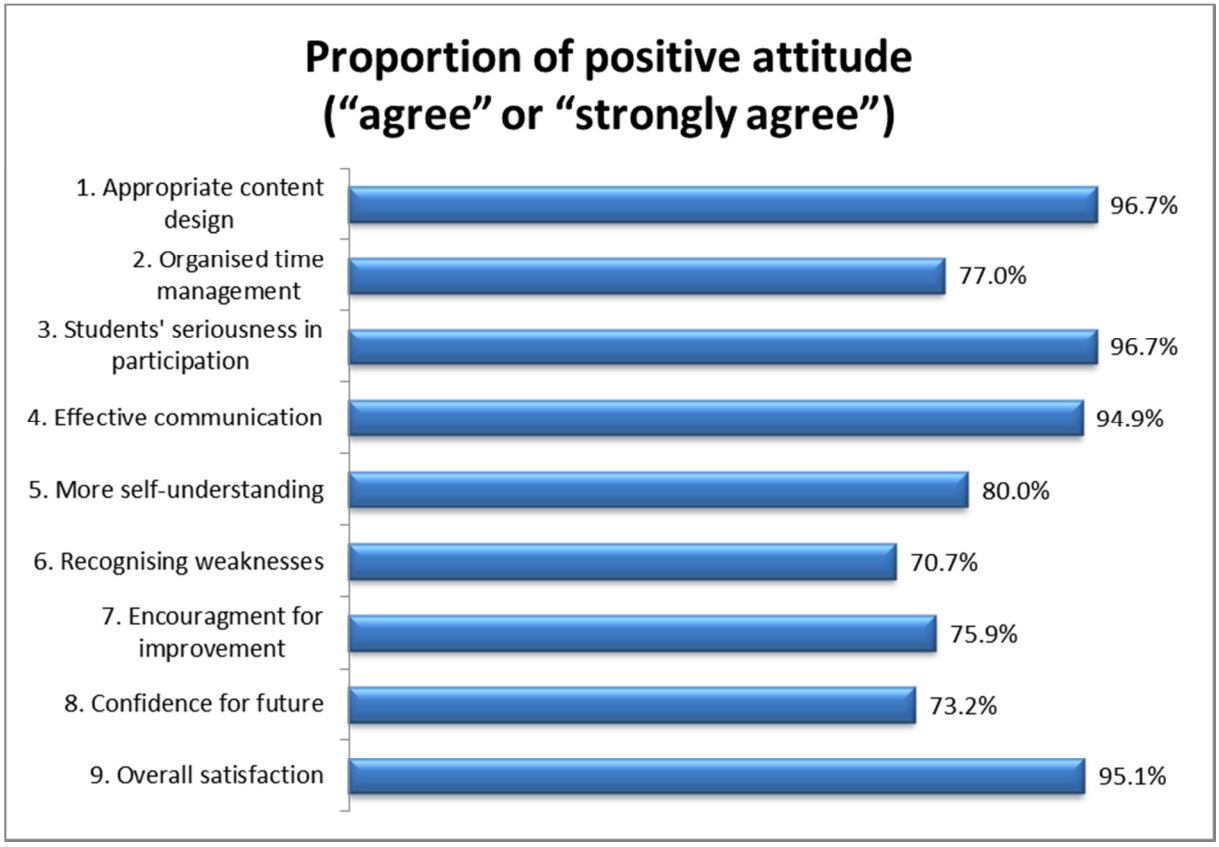
> *"It (QK Blog) is nice,… the game (memory test) is interesting and the conversations with the doctors were encouraging." – Student C*

2.2.3 Breakdowns of Students' Perceptions

A more detailed examination of students' perceptions on the different aspects of the project were illustrated in the following figure (Figure 2). Almost all the students (~95%) considered

that the contents covered in QK were reasonable, their perceptions in various testing were serious, and that the communications with professionals and assessors were effective.

Figure 2 Students' perceptions of the various aspects of QK project



Although almost all students favoured the content designs of QK, seriously participated in the assessments, and communicated with professionals effectively, only 70% to 80% of the students considered themselves actually benefited from the projects in the areas of understanding themselves better, recognising their weaknesses, being encouraged for improvement, and having more confidence to face future. This could be due to the fact that most of the students in QK would not be confirmed as cases, and no specific treatment or follow-ups would be administered. The contact with professionals (being social workers, occupational therapists, or medical doctors) during the secondary assessment in QK would be first and only opportunity for students to interact with them. Because of only limited face-time received, it was legitimate for certain proportion of the students perceived not as many benefits as others.

Given the limited contact time, establishment of the trust between the professionals and students would be challenging, but nevertheless utmost important for an effective consultation with positive outcomes.

> *"Yes, the professor tried to communicate with me on my own characteristics. But I didn't talk much on how I truly felt deep down my heart. I just knew him for a few minutes, how would you expect me to enclose all my feelings to him? (Interviewer: Under what situation would you feel comfortable to talk more?) I think I would if I could meet him for the second time or third time." – Student I*

The successful examples as cited by a student during the interview were with social workers, who were willing to share her personal experiences and thoughts with students as a friend. Being sympathetic and humanizing the situation seems to be critical to find common grounds and build productive interactions.

> *"The interview with social worker was […] like chatting with friends. She asked me questions that I never thought before. After that she shared her own opinion to those questions. I found that inspired me to think more about myself." – Student K*

> *"Although I was not confident to tell them (Social workers and medical doctors) all of my thoughts, I think the discussion with social worker could boost my confidence. She shared with me her own experience and told me how she coped with challenges. I then felt more confident towards challenges since she displayed a role model to me." – Student C*

In contrast to the successful examples, some students complained the one-way communication they experienced with social workers. The scenario described perhaps happened during HEADSS examination, when taking detailed personal history based on highly structured protocol.

> *"When I talked to the social worker, she just kept asking me questions, like whether I took drugs. It's like a one-way question-and-answer session rather than a discussion of my personal matters. I would expect she provided me some suggestions on how I should work out the way for future. But no, there was not." – Student H*

As mentioned the latter part of the above quote, many students during the focus group interviews expressed their expectation of receiving immediate feedbacks and suggestions from professionals based on the information they provided. In fact, students expected to learn new information or knowledge about the current themselves as well as strategies to improve their situations and become better selves. However, as the primary goal of the communications with various professionals emphasised more on making a diagnosis of case, less on treatment or intervention, some of these students may feel their expectations were failed to achieve.

> *"The communication with professionals was just okay to me. They had told me some facts about myself but I hardly found any analysis of my own personality. It couldn't help me understand more about myself." – Student J*

> *"Those people (Social workers and medical doctors) tried to let me know what was my strength and weaknesses. I appreciate that but those were not new to me. It'd be much better if they could tell me something that I didn't know. However I understand it'd be difficult as I only meet them for once." – Student C*

Following the same line of thinking, assessment with immediate outcomes/feedbacks on something new about themselves were greatly appreciated by many students, such as memory testing by occupational therapists and lung capacity testing by QK assessors, both of which were repeated mentioned during the focus group interviews.

> *"I like the poker game* (memory test) *the most. It's more active and somehow more interesting. I would know my score my compare with my classmates too." – Student F*

> *"[…] Perhaps my favourite is the memory test. Unlike the others, it was like a game to me and I could understand how my memory was with the feedback." – Student A*

> *"The exhaling exercise (Lung capacity test) was relatively interesting to me: at least I could do something actively and get a feedback afterwards." – Student G*

Similarly, many students favoured immediate feedbacks from professionals, especially when the professionals showed the sincere gestures of engaging with the point raised by the

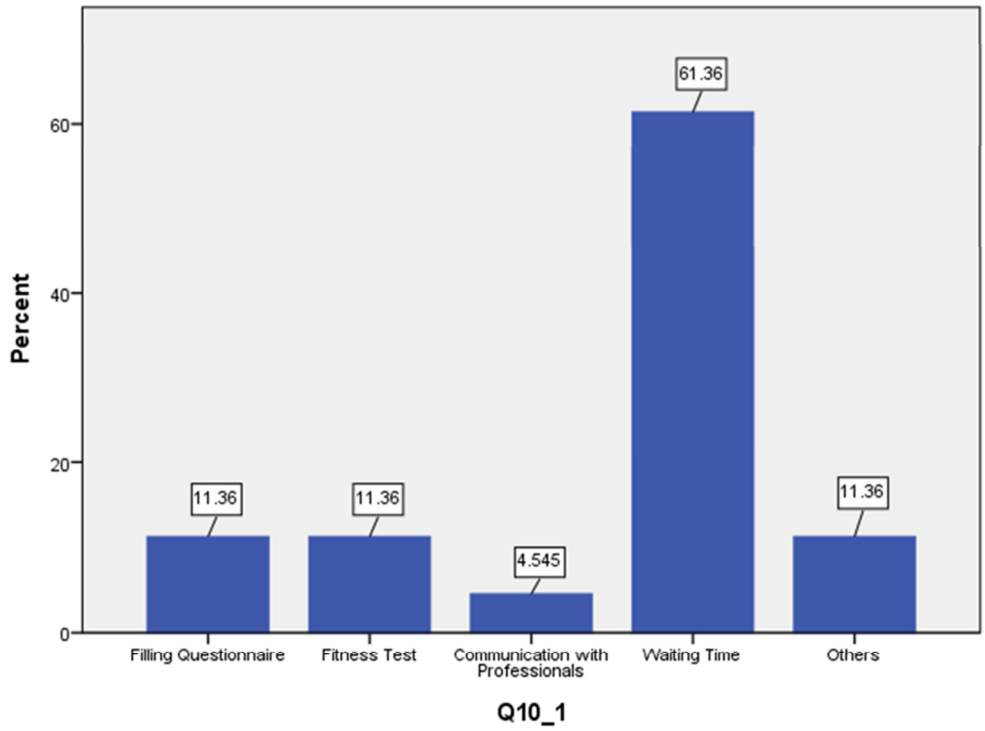
students immediately, and coming up with concrete plans tailored for the individuals.

> *"I told her (social worker) that I want to be a flight attendant in the future. She immediately searched the requirement for this online and suggested what I should do in order to achieve this goal. This helped me a lot." – Student L*

2.2.4 Least Satisfied Experience in QK

In terms of the least satisfied experiences associate with QK project, the students' perspectives were illustrated in the Figure 3. Consistent with the findings on the positive opinions of QK various aspects (as shown in Figure 2), prolonged waiting time was singled out as the most unfavourable experiences associated with QK project, with 61.4% of endorsement. The others included "contact time was too limited", and 'un-specified'.

Figure 3 Students' least satisfied experiences associated with QK



The concerns on time management were further discussed in the follow-up focus group interviews. Though students were generally comfortable with the time that was required for the assessment, the prolonged waiting time between the various assessment stations in QK was a prevalent complaint.

> *"I have to be interviewed by three doctors or social workers. The interviews took place for like 15 minutes but I have to wait for nearly half an hour between each sessions. The (assessment-to-waiting time) ratio was not fair." – Student B*

This prolonged waiting time may add substantially to the overall perception of time burden and commitment that QK demanded. This may be particular unfavourable in the face of their already tightly scheduled study and personal life.

> *"The evaluation took place after the lunch hour. Including the transition time, I have spent the whole afternoon in the clinic. This was simply too time-consuming, as I have heavy workload in school and outside. […] I think the reasonable time should be two to three hours for the whole process." – Student A*

2.2.5 Motivational Interviews

Totally five items were designed to evaluate the efficacy of motivational interviews. These items included the effectiveness of communication, the usefulness to discover students' own ability, etc. The standard passing mark for the motivational interview was set to be 10 (50% of total) and the satisfactory mark set to be 15 (75% of total). In the present sample, overall average score for the motivational interview was 14.6 over 20 (SD=2.4), which exceeded the passing mark ($p<0.01$) but not reached the satisfactory mark ($p=0.86$). From the breakdown of the overall motivational interview scale, there were two major weak areas: the ability in allowing students to understand their own weaknesses (mean score=2.8 over 4) and the ability in building up students' confidence (mean score=2.8 over 4). Generally speaking, the performance of the QK Blog motivational interviews was acceptable.

2.2.6 Areas for Improvement

Students were invited to comment on the areas in QK that they would like to improve. Slightly more than half of them (57.8%) wished the QK to have a better time arrangement. About 11.1% students would like to see improvements in having more immediate feedbacks during assessment and consultations. Almost all the students (>95%) considered the current location of QK and protection of privacy to be good enough and no further improvement or modification was required.

Related to the location of QK clinic, which was outside of school, the transportation from school to QK before assessment and from QK to school/home after assessment has been discussed in the interviews. Students were normally escorted by school teachers from school to QK to take part in the secondary assessment, and appropriate transportation would be arranged after the assessment was completed. Students found it rather acceptable for arrangement like such.

> *"The teacher brought us to the clinic by taxi and the fare was paid by him as well. After the evaluation he (the teacher) called a taxi for us to go back to school. The journey*

was quite fast and I didn't have any problem with it." – Student C

2.3 Referral Phase

The ultimate aim of assessment was to confirm at-risk students and allocate appropriate resources to them so that their problems could be intervened accordingly. Therefore the most important indicator of performance in the referral phase is how appropriate the referrals were. We would closely examine this using a qualitative approach.

2.3.1 Appropriateness of Referrals

Totally 71 cases (out of 251 attended adolescents) were established and confirmed in the QK Blog. These cases were referred to hospital clinics, occupational therapists, social workers, and NGOs. The situations were different from case to case and quantitative models may not be the most suitable tool for this end. Therefore a structured communication technique (Delphi Method) was used for this evaluation.

A multidisciplinary panel was formed to assess QK Blog's referral appropriateness. The panel members included two paediatricians experienced in adolescent health, a well-published adolescent health researcher who has worked in the field for more than 10 years, an education researcher focusing on adolescent health related behaviours for more than 6 years and a former teacher who has taught in two local secondary schools. An independent facilitator was invited to hold the panel meeting. During the discussion meeting, the facilitator provides the detail of a case to all panel members. The panel members then discuss whether a referral was necessary and to which external parties the subject should be referred. After discussion, an anonymous vote was carried out for referral decision. If there are disagreement among the panel members, a second round of discussion was carried out which then followed by a second round of vote. The process repeated until a consensus reached or the fifth round of vote was reached.

Totally two Delphi discussion meeting were held for the decision of 71 cases. Out of 71 cases,

59 decisions (83.1%) coincided with those actually assigned by the QK Blog. The major discrepancies occurred in the decision between school social workers and external NGOs such as Hong Kong Federation of Youth Groups. It may also be worthwhile to note that under the current service model of QK Blog, only limited interviews between the clients and the professionals were available, which hindered the establishment of trusted relationship and in turn inhibited the referral agreement of the client. Regardless, the general appropriateness of referral system in QK Blog deemed satisfactory.

2.3.2 Compliance of Referral

No matter how appropriate the case referrals were, if the students did not comply, the referrals are of no use. Therefore we followed up with the external parties whether the students have attended the first referral interview to verify the compliance of referral. Table 5 shows the detailed figures of the compliance. The overall compliance to the first interview was 66 out of 71 (93%) which is indeed excellent. Breaking down the external parties into three sub-groups (occupational therapists, hospital out-patient clinic, and social workers), we found that the compliance of referral to occupational therapists and hospital out-patient clinic was 100% while that to social workers was 73%. The difference in compliance quality could due to the case nature difference. Nevertheless there are currently no communication protocol between the QK Blog and the external parties and therefore we could hardly understand the long-term statuses of the established cases. Generally speaking, the compliance of referral in QK Blog was very good.

Table 5 Compliance of Referral

External Parties	**Number of Students Attended the First Follow-up Interview**	**Percentage of Students Attended the First Follow-up Interview**
Occupational Therapists	40	100%
Hospitals Out-patient Clinic	9	100%
NGO or School Social Worker	17	77%

Chapter III – Summative Evaluation

In this chapter we would evaluate the QK project in a broader perspective. First, the relevance of screening programme would be closely examined by checking the association between outcomes and contributing factors. Then we would investigate the overall effectiveness of the QK Blog system in terms of students' own perception. The perceived change of students would be tested and the factors associating with perceived change would also be identified. We also interviewed stakeholders in schools for their overall feedbacks and recommendations regarding the service to reveal their acceptance. Last but not least, the sustainability issue of the project would be discussed using the degree of community integration as an indicator.

3.1 Relevance of Screening Programme

3.1.1 Sampling and participants

Among the three schools in the QK evaluation, a total of 2538 students from form 1 to 7 were assessed in school with both lifestyle questionnaire and direct fitness tests. The Characteristics of the students were summarised in Table 6.

The students were evenly distributed from Form 1 to Form 6, with smaller proportion drawn from Form 7. They were predominately males (65.2%), and about two thirds (66.0%) did not have religious belief.

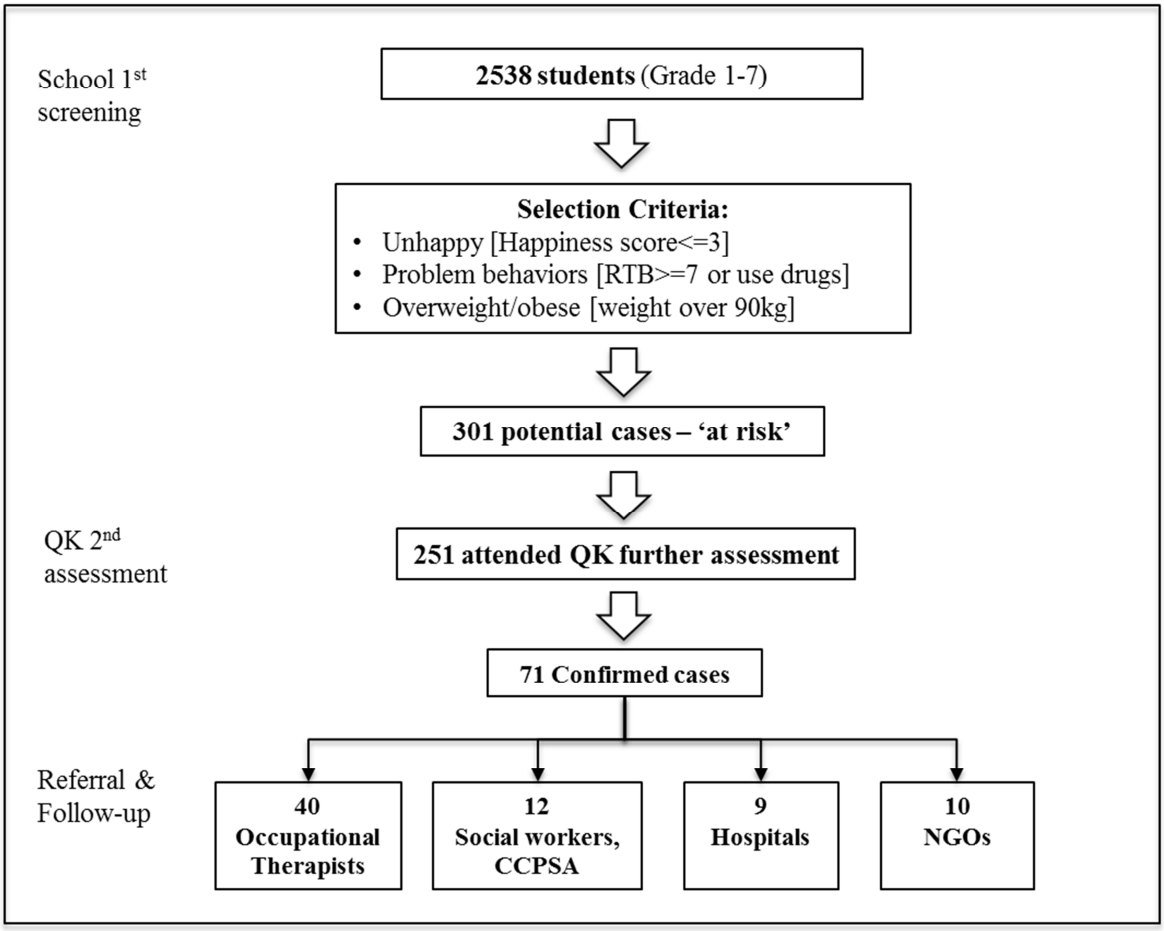
Based on the pre-set selection criteria, 301 students were identified as 'at-risk', and invited for further assessment in QK blog. Among them, 251 (83.4%) subsequently turned up in QK. According to the result of detailed assessment conducted by professionals, 71 were confirmed as cases and referred for treatment and follow-up. Among them, 40 were followed up by occupational therapists, 12 were followed by social workers or CCPSA, 10 were followed by NGOs, and 9 were followed by PMH/YCH. Figure 4 depicted the flowchart of school

screening and QK further assessment.

Table 6 Demographic Characteristics of Students in the three schools participating QK Project Evaluation

	N	Percentage (%)
School		
Ng Siu Mei	539	21.2
Methodist	1027	40.5
Lion	972	38.3
Sex		
Males	1654	65.2
Females	828	32.6
Missing	56	2.2
Religion		
Yes	696	27.4
No	1674	66.0
Missing	78	3.1
Form		
1	366	14.4
2	349	13.8
3	403	15.9
4	397	15.6
5	423	16.7
6	412	16.2
7	188	7.4
Total	2538	100

Figure 4 Flowchart of School Screening and Secondary Assessment in the three schools participating QK Project Evaluation

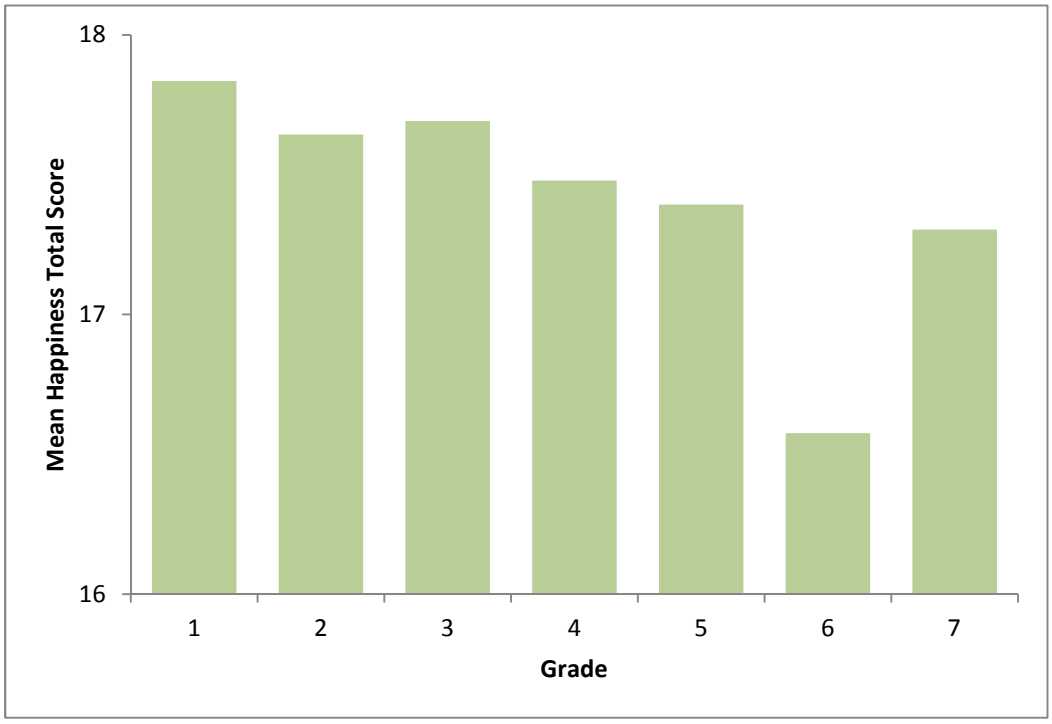


Note: Selection criteria were set by the QK Blog Committee. RTB stands for Risk Taking Behaviour questionnaire.

3.1.2 Happiness

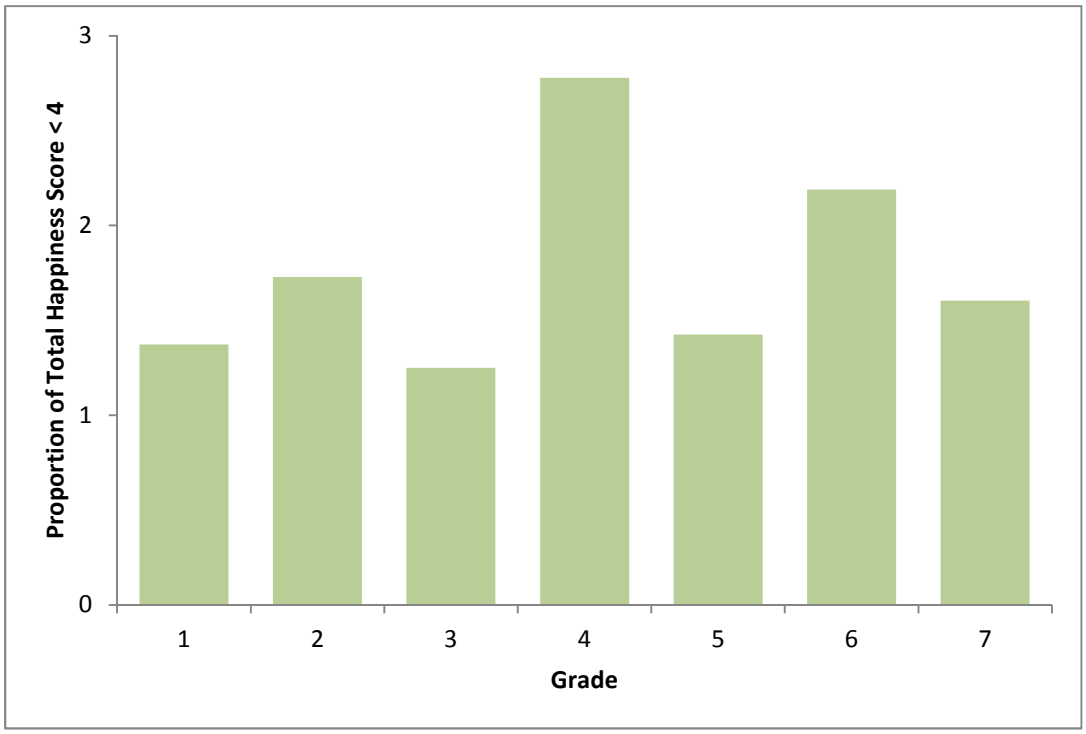
Happiness was assessed with WHO five-item construct. On average, the school students scored 17.41 (SD=5.00). It appears that the students were getting less happy as they progressed to higher grade, with the happiness scores decreasing from 17.84 (5.37) in Form 1 to 16.57 (4.77) in Form 6 (see Figure 5). Grouping Form 1-3 as junior grades, Form 4-5 as middle, and Form 6-7 as senior grades, students in junior grade-levels scored significantly higher than those in the senior grade-levels (X^2=6.3, df=2, p=0.002). The analysis on the group variations suggested that there was a linear decreasing trend of happiness when students progressing from junior to senior grade-levels (X^2=12.14, df=1, p=0.001).

Figure 5 Happiness average scores by grade-levels (Form 1 to Form 7)



Using cut-off value of happiness score ≤3 to identify adolescents subject to further clinical assessment, the proportion of severely unhappy individuals seemed to peak at middle grade-levels, particularly Form 4 (3.01%). The distribution of severely unhappiness by grade-levels as illustrated in Figure 6 did not reach statistically significance (p <0.05).

Figure 6 Percentage of Happiness Score ≤3 by Grade-levels (Form 1 to Form 7)



Happiness average scores did not differ significantly between boys and girls. However, those who had a religious belief tended to be slightly happier than those without, and the difference reached statistical significance (X^2=4.14, df=1, p=0.042).

3.1.3 Risky Behaviours

During the school screening process, students' risky behaviours were measured by 13 yes/no questions. Those who had seven or more such behaviours or reported ever used illicit drugs during the past 12 months would be referred to QK for further assessment. Here described the prevalence and pattern of adolescent risky behaviours in the general student population of the participating schools.

On average, students reported ever engaged three risky behaviours in the past 12 months, and the variations was large (SD=3.11). Regarding the pattern across grade-levels, there was a linear increasing trend from Form 1, hitting the peak at Form 4, and then maintained by a plateau throughout the higher grades (Form 5-7). The pattern was consistent and statistically significant (X^2=12.69, df=6, p<0.001). Figure 7 depicted the average number of endorsed

risky behaviours by grade levels, and Figure 8 illustrated the percentage of those with seven and more Risky behaviours in each grade. Consistent with pattern of average risky behaviours, Form 4 was as the grade-level with most prevalent (20.0%) of potential cases (Risky behaviours ≥7), which was about three times of that in Form 1 (7.81%).

Regarding the association with other demographic variables, there was no significant difference between boys and girls in terms of total number of risky behaviours engaged, and the likelihood of being identified as potential cases (risky behaviours≥7). There was also no evidence supporting having a religious belief would prevent an adolescent from engaging all these measured risky behaviours.

Figure 7 Average Number of Risky Behaviours by Grade-levels (Form 1 to Form 7)

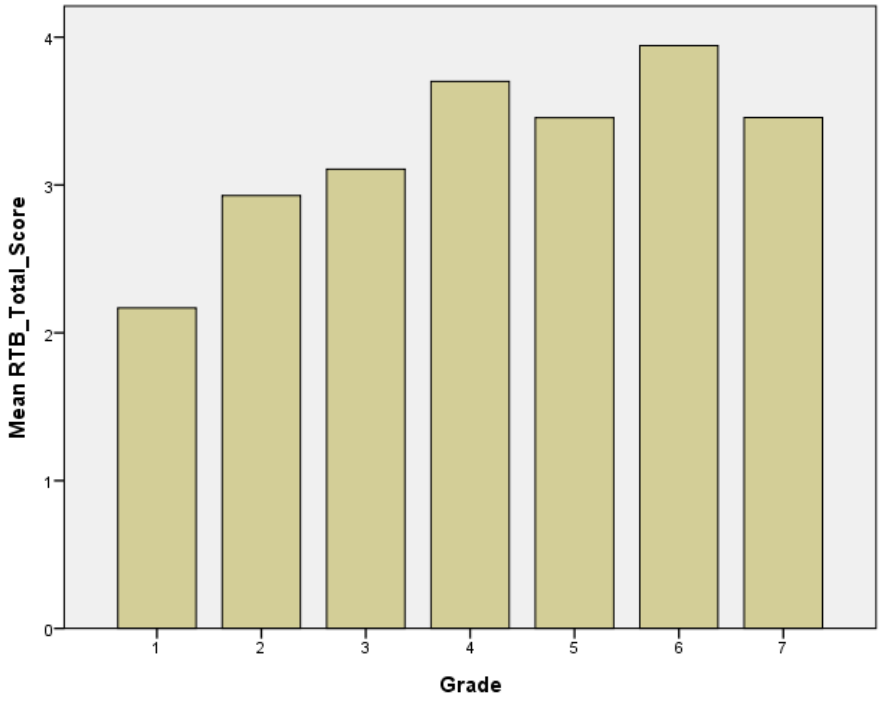
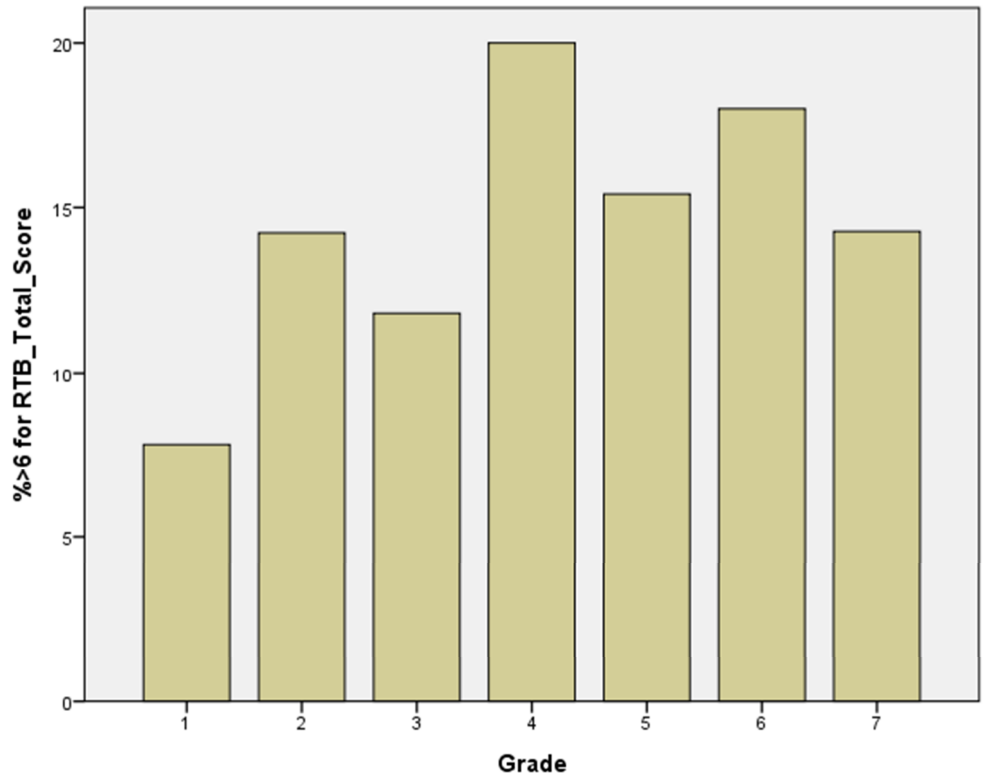


Figure 8 Percentage of Potential Cases (Risky Behaviours≥7) by Grade-levels



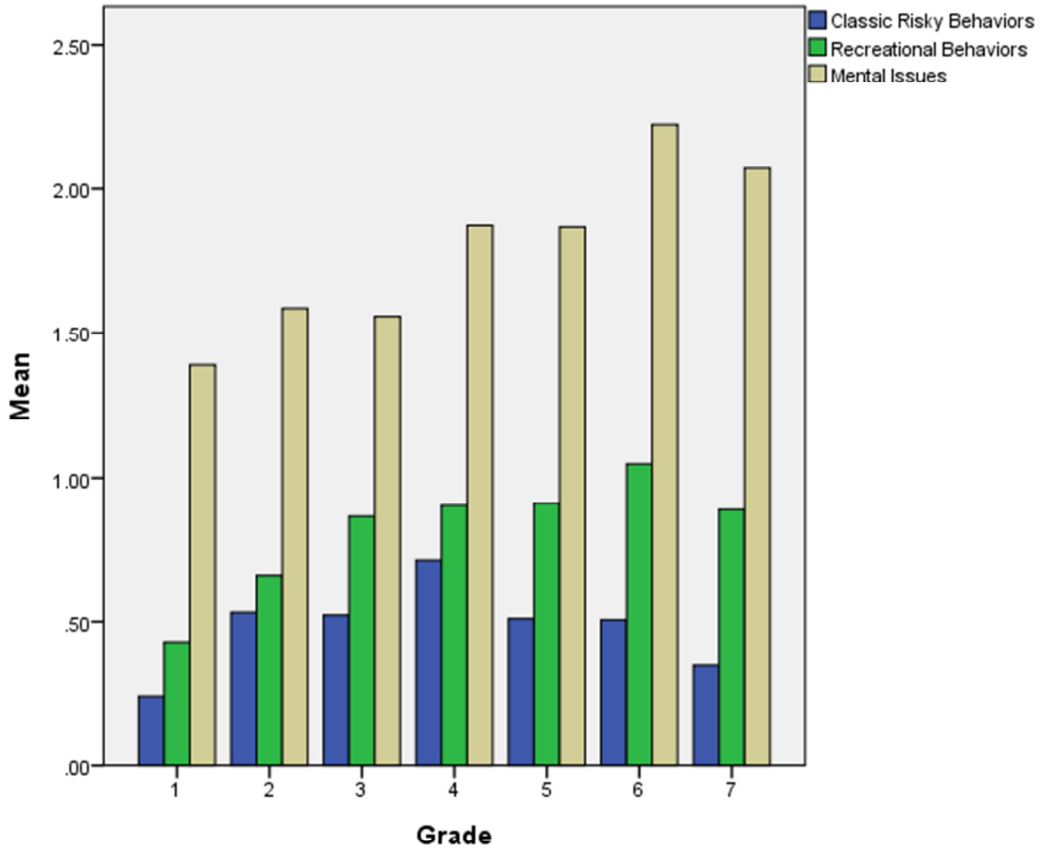
In order to gain a more detailed insight of behavioural data, the 13 behaviours were further classified into three categories, namely recreational behaviours, (classic) risky behaviours, and mental issues. The three category solution was supported by both the school data and substantiates knowledge:

- **Recreational:** two behaviours - partying, Kara-okay
- *(classic)* **Risky behaviour**: five behaviours - truancy, skipping class, smoking, drinking alcohol, taking drugs
- **Mental:** six behaviours: feeling down, sleeping problem, grumpy, deterioration in memory, slow in cognitive processing, anxiety.

The trend of the three categories of behaviours was plotted across grade-levels (see Figure 9). All the three categories of behaviours differed significantly (p<0.001) among different grade-levels. The pattern of the individual category showed distinctive characteristics as compared to all the behaviours as one single entity. Specifically, *(classic)* risky behaviours – indicated by the blue bars – presented an increasing trend during the junior grades (Form 1 to Form 4), and then decreased after peaking at Form 4. Recreational behaviours was by large

resembled the pattern of all the behaviours pulled together in Figure 7, however, the plateau started earlier (Form 3) with recreational behaviours. Mental issues showed a significant increasing linear trend (X^2=41.56, df=1, p<0.001) along with the increasing of grade-levels.

Figure 9 Recreational Behaviours, (*classic)* Risky Behaviours, and Mental Issues, by Grade levels



The association between the three categories of risky behaviours with gender revealed that boys engaged in significantly greater number of classic risky behaviours then girls (X^2=47.84, df=1, p<0.001), whereas girls reported greater number of mental issues than boys (X^2=19.69, df=1, p=0.006). Having religious belief or not was not found to be related to any of the three categories of risky behaviours.

3.1.4 Overweight & Obese

Based on Body Mass Index (BMI), only 651 (25.7%) students were in the normal range. 603

(25.3%) students were found to be overweight or obese. There were significantly more boys than girls (26.8% vs. 22.3%, $p<0.001$) classified as overweight or obese. However, on the other side of the problem, there were also significantly more boys than girls (49.9% vs. 42.0%, $p<0.001$) to be below the normal weight.

Concerning the trend of overweight/obese by grade-levels, students were more likely to gain weight during the junior grades, and peaked at Form 2, then gradually decreased during the middle grades, and stabilised during the senior grades. The pattern across grade-levels was illustrated in Figure 10. However, a more detailed examination of the trend between boys and girls revealed a rather gender-specific story (see Figure 11). For girls, the percentage of overweight/obese increased throughout the junior grades (Form 1-3), and dropped dramatically in Form 4, and 7, respectively. For boys, however, the percentage of overweight/obese fluctuate throughout most of the secondary school years (Form 1 to 6), and increased radically in Form 7.

Figure 10 Percentage of Overweight or Obese by Grade-levels (Form 1 to 7)

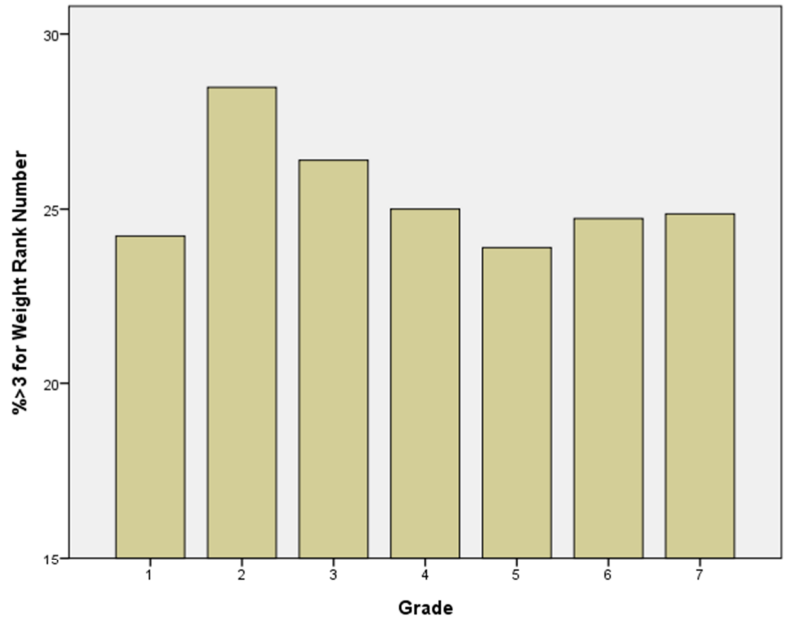
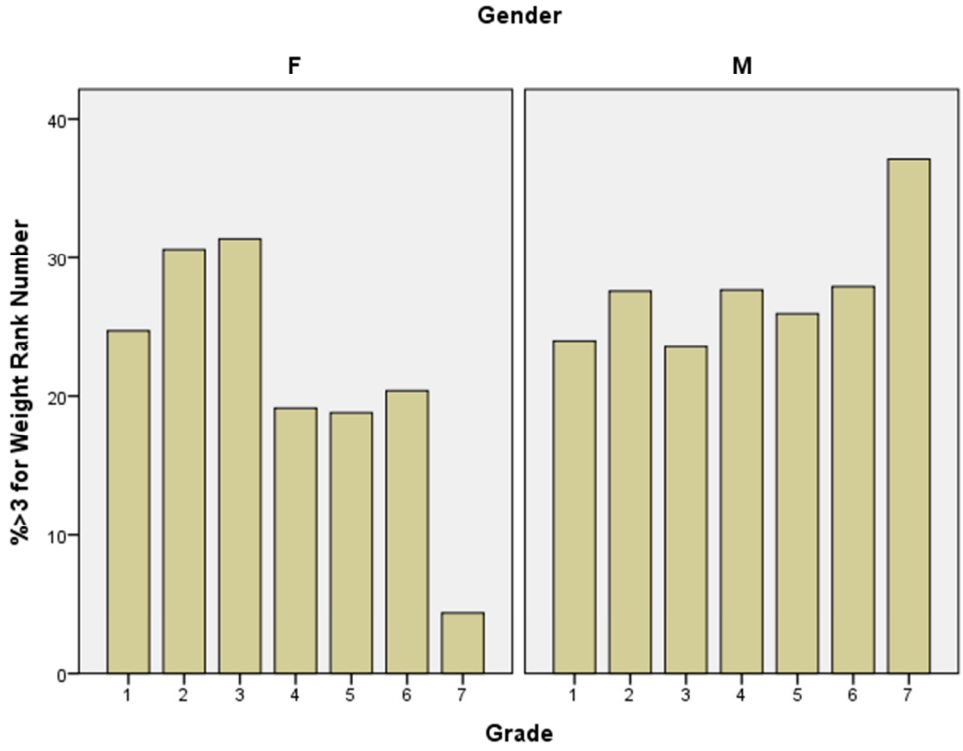


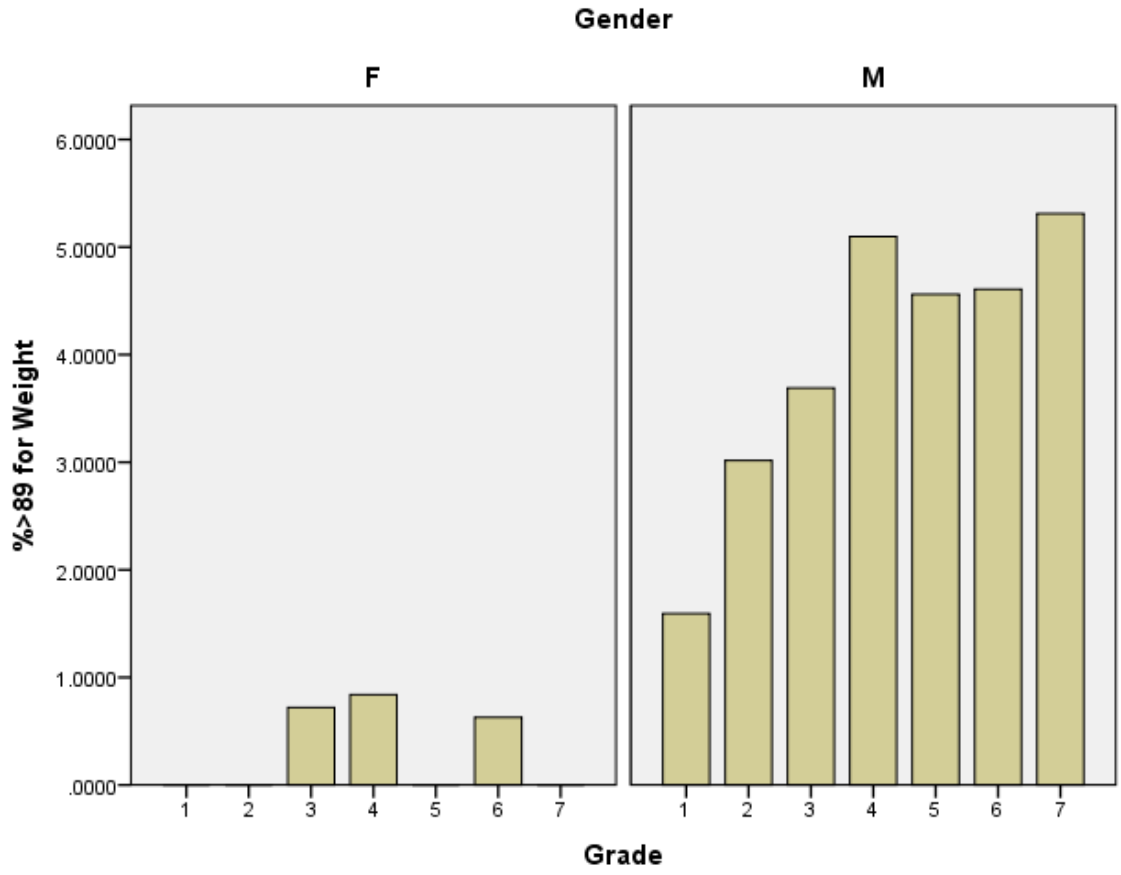
Figure 11 Percentage of Overweight or Obese by Grade-levels, by Gender



For the screening purpose of the school assessment in this project, a more stringent and easy-to-use criteria was used to identify potential cases that require further

treatment/follow-up. Students' weight equal or above 90 kg would be referred to QK for further detailed assessment. The distribution of these identified potential cases by grade was presented for boys and girls respectively in Figure 12. There were only three girls who met these screening criteria. Majority of the potential cases that were referred to QK blog with concerns on body weight were boys, and the likelihood of being identified from their individual grade-level was found to be increasing linearly from Form 1 (1.59%) to Form 4 (5.10%), and remained relatively stable after that (4.61-5.31%).

Figure 12 Percentage of Potential Cases (Weight≥90 Kg) by Grade-levels (Form 1-7), by Gender



3.1.5 Fitness Testing

As part of the school assessment, a series of physical fitness tests were administered on school students, including lung capacity, stand jump, sit and reach, etc. Though not included as screening criteria in the current project, the data showed a reasonable correlation with

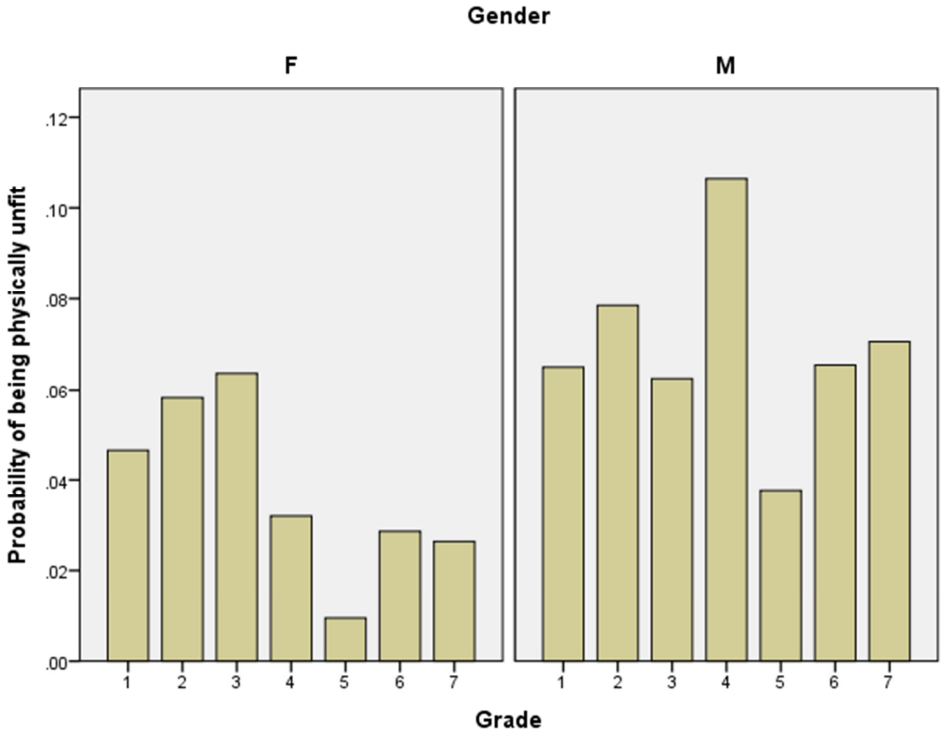
self-report physical and leisure activities as measured in the short school screening questionnaire, in that students who reported higher level of physical activities also tended to have better fitness test results. The individual test result of fitness testing were fed back to the students and parents as a summary report.

To summarise the overall fitness levels of students from three participating schools, a total of 110 (4.3%) students failed the overall test. For the specific test:

- 548 (21.6%) did not reach the standard for sit and reach test;
- 90 (3.5%) did not reach the standard for lung capacity test;
- 1398 (55.1%) did not reach the standard for stand and jump test;
- 17 (0.7%) did not reach the standard for step test.

Compared to girls, boys were more likely to be identified as physically unfit in their respective grade-levels (See Figure 13), and the difference was statistically significant (OR=1.87, 95% CI: 1.18-2.95, p=0.007). Specifically, boys performed poorer than girls on tests including sit and reach test (OR=1.50, 95% CI: 1.21-1.85, p<0.001), and lung capacity test (OR=2.52, 95% CI: 1.44-4.43, p=0.001). However, boys performed better than girls on stand and jump test (OR=0.34, 95% CI：0.28-0.41, p<0.001). The performance on step test did not differ significantly between boys and girls.

Figure 13 Probability of Physically Un-fit by Grade-levels, by Gender



Though the overall fitness performance did not vary much across the grades, lung capacity, interestingly showed a similar pattern as risky behaviours as students progressed from lower to higher grades. Thus interpretation of bivariate relationships should be taken into account of potential confounding effect from grade-levels.

3.1.6 Possible Causes and explanation

The data gathered from the school screening exercise in QK project also shed lights on the possible causes or affecting factors for happiness, and risky behaviours.

- **Happiness**

After controlling for grade-levels (Form 1 to 7), partial Pearson correlation coefficients were estimated between happiness scores and a series of correlates, including sports, leisure activities, overall fitness rank, risky behaviours, and BMI rank. Happiness scores were positively and significantly correlated with sports and leisure activities, but negatively

correlated with the number of risky behaviours engaged in the last 12 months. In other words, students who were more physically active and less engaged in risky behaviours were happier.

Table 7 Partial Pearson Correlation Coefficients between Happiness, Sports, Leisure, BMI, Fitness Scores, and Number of Risky Behaviours, Controlling for Grade-levels

	Happiness	**Sport**	**Leisure**	**BMI**	**Fitness**
Sport	**.245*** **				
Leisure	**.137*** **	**.366*** **			
BMI	.021	.030	-.018		
Fitness	.017	**.192*** **	**.108*** **	**-.186*** **	
Risky behaviours	**-.216*** **	**-.132*** **	**-.062***	.030	-.006

Note: *** $p<0.001$; ** $p<0.01$; * $p<0.05$

Retrieved from the school screening data, the relationship between happiness scores and social connectedness (including parents, teachers, and peer relationships), family functioning, health-related behaviours, and three categories of risky behaviours were explored with ANOVA. The items that were found to have significant relationships with happiness were denoted in Table 8.

Table 8 Contributing Factors for Happiness

Item No.	Description	Happiness
Health-related behaviours		
1	你有否經常吃蔬菜或水果?	***
2	在過去30天內, 你有否用任何方法來保持體重或減肥(如進食後扣 喉、服用瀉藥或減肥藥)?	***
Family functioning		
3	在你家中, 有否家庭暴力?	
4	你父母有否吸煙?	*
5	你父母有否飲酒?	*
6	你父母有否吸食毒品?	*
Social connectedness		
7	你有否經常參與一家人的活動?	***
8	你覺得父母是否關心你?	***
9	你是否感到校內師生關係良好?	***
10	校內是否有關心你的老師?	***

11	校內是否有關心你的朋友?	**
(*Classic*) risky behaviours		
1	你有否上學時遲到超過5次?	
4	你曾否逃學去玩?	*
5	你有否吸煙的習慣?	
6	你有否飲酒的習慣?	*
9	你曾否服用任何藥物令情緒高漲和興奮?	
Recreational behaviours		
2	你曾否外出唱K或蒲網吧?	
3	你曾否蒲通頂?	
Mental issues		
7	你有否經常唔開心?	***
8	你曾否出現睡眠不足問題?	***
10	你曾否感到異常的暴躁?	***
11	你有否出現記憶力衰退?	***
12	你有否覺得思考變得遲緩?	***
13	你有否出現情緒焦慮?	***

Note: *** $p<0.001$; ** $p<0.01$; * $p<0.05$

The key messages from this analysis were that:

- ✓ Adolescents who were socially connected closely are happier

  The data suggested that happiness levels of adolescents have strong and significant correlation with social connections with parents, teachers and peers. Perceptions of having someone caring for them, being parents, teachers or peers, seem matter greatly for their happiness. Spending time together with family members was also beneficial in making adolescents happier.

- ✓ Happiness seems to go hand in hand with the whole set of mental issues
  Happiness showed strong and significant correlations with all the measured issues related to mental and cognitive functions, including sleeping, memory, cognitive capability, anxiety and mood disturbance.
- ✓ Engaging in health-related behaviours made adolescents happier
  Although seeming like a rather distal relationship, the data did suggest that adolescents who eat healthier, and were trying to manage weight were generally happier. The findings were consistent across schools, and were significant at the level of $p<0.001$.
- ✓ Family functioning and engaging in *classic* risky behaviours had something to do with happiness.
  Adolescents who engaged in one or more classic risky behaviours, particularly skipping classes and drinking alcohol in the past 12 months were less happy than others. Similarly, parents' substance abuse behaviours, including smoking, drinking and taking illicit drugs were correlated with adolescents' happiness levels negatively ($p<0.05$). Engaging recreational activities and other high-risk behaviours does not seem to elevate the level of happiness

Risky behaviours

Partial Pearson correlation coefficients were estimated between risky behaviours and a series of correlates, such as sports, leisure activities, overall fitness rank, happiness, and BMI rank, after controlling for the effect of grade-levels. As highlighted with yellow in Table 9, number of risky behaviours was negatively and significantly correlated with sports and leisure activities, as well as overall happiness levels. In other words, the data suggested that

physically more active individuals would engage in a smaller number of risky behaviours, and individuals with less risky behaviours were happier.

Table 9 Partial Pearson Correlation Coefficients between Happiness, Sports, Leisure, BMI, Fitness Scores, and Number of Risky Behaviours, Controlling for Grade-levels

	Happiness	**Sport**	**Leisure**	**BMI**	**Fitness**
Sport	**.245*** **				
Leisure	**.137*** **	**.366*** **			
BMI	.021	.030	-.018		
Fitness	.017	**.192*** **	**.108*** **	**-.186*** **	
Risky behaviours	**-.216*** **	**-.132*** **	**-.062***	.030	-.006

Note: *** $p<0.001$; ** $p<0.01$; * $p<0.05$

As summarised in Table 10, risky behaviours were analysed as three categories individually and collectively. The data seems to suggest that adolescents who were lonely but desired to be socially accepted would be more likely to engage in recreational activities; whereas adolescents whose family did not function well were more likely to engage in (classic) adolescent risky behaviours and suffered from a series of mental issues. The key evidences were listed as follows:

- ✓ Adolescent risky behaviours had a lot to do with family functioning

  As revealed in the data, family functioning, including family violence and parents' substance use behaviours, were consistently and significantly correlated with the probability of engaging all three categories of risky behaviours respectively and engaging in multiple (≥7) risky behaviours.
- ✓ Social connections with different parties showed protecting effects on adolescents' risky behaviours

  Having a good relationship with school mates and teachers in school seems particularly preventive in engaging *classic* risky behaviours, such as substance abuse, and skipping classes. Having caring friends seemed particularly importance for adolescents as far as risky behaviours were concerned. Those with caring friends were less likely to engage in recreational behaviours, reported less mental

issues, and less likely to take part in multiple (≥7）risky behaviours at once. Spending time together with families also seemed preventing adolescents from engaging recreational activities outside, and multiple (≥7) risky behaviours. Interestingly and unexpectedly, consuming fruits and vegetables more frequently were negatively associated with *classic* risky behaviours.

Table 10 Contributing Factors for the Occurrence of Risky Behaviours

Item No.	Description	*Classic* risky	Recreational	Mental	Total≥7
Family functioning					
3	在你家中, 有否家庭暴力?	***	**	***	***
4	你父母有否吸煙?	***	***	***	***
5	你父母有否飲酒?	***	***	***	***
6	你父母有否吸食毒品?	***	**	***	
Social connectedness					
7	你有否經常參與一家人的活動?		***		***
8	你覺得父母是否關心你?		*		*
9	你是否感到校內師生關係良好？	***		*	
10	校內是否有關心你的老師?	*			
11	校內是否有關心你的朋友?		***	***	***
Health-related behaviours					
1	你有否經常吃蔬菜或水果？	***			
2	在過去30天內, 你有否用任何方法來保持體重或減肥(如進食後扣 喉、服用瀉藥或減肥藥)?				

Note: *** $p<0.001$; ** $p<0.01$; * $p<0.05$

3.2 Overall Effectiveness

Starting from half year after the intervention, the participating students in QK Blog was asked to complete a questionnaire for evaluation. In the questionnaire, 4 items measured their perceived development after the programme, including their understanding to themselves and

their confidence. In addition, three items measured their perception and attitude towards the programme. The perceived change score was 11.5 out of 16 (SD=2.14) and was significant greater than the passing mark ($p<0.01$). This reveals the project was successful in allowing students to internalise the knowledge and education during the intervention.

A multiple linear regression analysis was carried out in order to pinpoint any contributing factors for the perceived change. Table 11 shows the regression analysis result.

Table 11 Contributing factors for the perceived development

Factor	Coefficient Estimates	95% Confidence Interval	p-value
Gender	0.28	-0.95 to 1.50	0.65
Age	0.04	-0.34 to 0.41	0.84
Perception on design	0.91	-0.85 to 2.68	0.30
Perception on time management	1.25	0.10 to 2.40	0.03*
Perception on communication effectiveness	1.20	0.06 to 2.33	0.04*

It was found that there seems to be no subgroup difference among the participants as gender, age, and whether the students were repeater or not did not significantly associate with their perceived change. Their perception on programme design also induced no significant effect on their change. However, we found that adolescents' perception on time management and perception on communication effectiveness associated positively ($p<0.05$) on their perceived change. In other words, adolescents could potentially experience substantial development if the programme had a good time management plan and the frontline professionals could provide a warm and close conversation with the clients. This provides insight to the future development of the present project as adolescents previously reported that time management was a weak point in the programme.

3.3 School Acceptance

To evaluate the project performance from the perspective of schools, we invited 5 school frontline professionals to semi-structured qualitative interviews. The 5 attended professionals

included a school vice-principal, a head of discipline and counselling unit, a school social worker and two teachers managing students to visit QK Clinic.

School professionals generally agreed that the QK Blog service could be useful in identifying and referring at-risk students where teachers in school were unable to do under present situation.

> *"Yes, I think it could help in some ways. The burden of teachers nowadays was quite heavy. Though it seems a shift of responsibility, we really don't have much time to help the at-risk students even if we could identify them. QK Blog in this sense could be a supplement to the formal system." – Vice principal of a school*

However, the head of discipline and counselling unit of another school stated that he wished the QK Blog could provide individual case information back to school so that they could inform the corresponding teachers for caution and management.

> *"Sure it is useful. But it'd be better if we could receive more feedback from you. Currently we only received the overall summary report on the whole school situation where we do not have particular case information. This could help the future planning of school but it helps very little in the micro-management of the school. We won't know anything even if you identify a drug addict in my school." – Head of discipline and counselling unit of a school*
>
> (Interviewer mentioned confidentiality could be a problem.)
>
> *"Yes we understand privacy is quite important in the present situation. But is it possible to at least provide the case information to the social worker? The social worker could somehow act as a third party beside the school and QK Blog." – Head of discipline and counselling unit of a school*

This highlighted that the schools actually wish to have closer communication with the QK Blog and obtain individual case information where teachers could not gather in school setting. This involves the confidentiality of students' information enclosed in QK Blog and therefore requires multidisciplinary discussion before revamp.

3.4 Sustainability

An important indicator of sustainability of a community based project is whether the project could be integrated into the existing formal system in order to generate and share common resources. In this section we examined closely the QK Blog in this aspect.

The QK Blog was solidly integrated into the education system. The schools were cooperative and supportive in assisting questionnaire-based screening and arranged a normal school day afternoon for students to attend the QK Clinic. They provided additional assistance students transportation as well. This was especially useful for schools located far from the QK Clinic. In return, the QK Blog has successfully provided Health and Risk Behaviour Profile to every participating school. The reports outlined an overview on the health status of the schools, including students' nutrition intake, exercise habit, mental well-being, and health-related risk behaviours. Although the QK Blog could provide only aggregated statistics, the school profile reports were found to be useful in strategic planning.

> *"I like the idea of providing feedback to school. The school profile could be an evaluation of students' different aspects besides academic performance in which we didn't have chance to take a look on. I think the content of the report basically matched with our intuition but it is always good to have solid evidence, especially for planning purpose." – Vice principal of a school*

It is, however, advisable to review the information provided to the schools as some of the school teachers revealed they would like to understand individual case details for micro-management (as mentioned previously in section 3.3) and administrative planners would like to acquire concrete recommendation on how to improve students' overall physical and mental health in response to the phenomenon in the school profile reports.

> *"… Reporting and descripting the phenomenon is surely important and interesting. Yet I think the report could emphasise more on how we could improve the situation, e.g. is there any community based solution to the problem? Is there any policy the school could try to adopt? These would surely enrich the report for us the frontline teachers." – Vice principal of a school*

In contrast, the connectedness between QK Blog and external parties for referral seemed to be less strong. 301 potential at-risk students were assessed by QK Blog professionals and 71 were successfully established and referred. The referred cases were also found appropriate and the quality of compliance was excellent (93% attended the first referral interview). This demonstrated the effort of QK Blog in engaging community resources. Yet the external parties failed to provide regular feedback on referred cases, which inhibits the long term follow-up. We highly recommend QK Blog to establish a thorough communication protocol with contracted external parties in the future. All in all, the sustainability issue for QK Blog was acceptable.

Chapter IV – Summary and Recommendations

In this chapter we will highlight some of the key points in this report and recommend for further improvement accordingly.

4.1 Summary

The data that QK project gathered from school assessment not only served the purpose of identifying potential cases for follow-up and treatment, but also provided invaluable information to understand the general picture of students' health and wellbeing, including happiness, risky behaviours, overweight/obese, and fitness.

Progressing from lower grade to higher grade, students were getting less happy and compounded with more risky behaviours, and mental issues. All of these concerns seem to follow a similar pattern that increasing from junior grades, peaking at middle grades, then maintained at high levels throughout the higher secondary school years. These findings highlighted at least two messages for future actions. First, unhappy adolescents and problem adolescents shared something in common, which could be innate or environmental factors, or the combination thereof. Second, effective actions must be taken before entering middle grade levels, which include primary preventive and secondary preventive strategies.

The data revealed that social connections were critically important for adolescents. An adolescent would be significantly happier, if he or she was socially connected to parents, and teachers, school mates and friends. Adolescents' happiness was also closely related to their mental and cognitive functions, including memory, cognitive processing, mood regulation, anxiety, etc. Therefore, creating a more socially accepting and supportive environment in both school and family would be very important.

Regarding risky behaviours, the foremost important factor was family. Parents' behaviours, attitudes, and family dynamic in general, all had significant impacts on adolescents' risky behaviours. The picture of adolescents with multiple problem behaviours that emerged from the data was a vulnerable adolescent crying for help. They did not seem to have as much time spent with families, and no friends who cared for them, however, at the same time, they were

exposed to family violence, and parents' substance use problems. Though the conclusion is subject to reverse causation to some extent, lacking a caring environment and supportive family would undoubtedly put these adolescents at a particularly vulnerable position.

In summary, the school screening program was effective in identifying high-risk adolescents, and the most vulnerable adolescents were handled by professionals through QK blog. The referral was made appropriately upon the thorough investigation of individual profiles. However, there was greater proportion of adolescents who were in similar vulnerable trajectory remained in schools. The comprehensive data that were obtained on both lifestyle and fitness were particularly useful in monitoring and understanding adolescents' needs and concerns, which would inform future actions in preventing the progression of the concerned problems, as well as cultivating happy and well-adjusted young people.

The service provided from QK Blog was satisfactory. Despite the concerns on time management, adolescents showed a good level of acceptance of the service model that QK project provided. The experiences they had with assessments, communications with staff and professionals, logistic arrangement were generally good. The testing and activities set out in QK were able to engage most of the students but there are rooms for improvement in the motivational interviews. The intervention also provided a satisfactory perceived change among the participants. In general, based on the feedbacks from adolescents, the QK project was well-received by the adolescents and their experience in QK were positive and encouraging.

In terms of overall project management, the QK Blog appeared to achieve its aim successfully. The screening questionnaire was relevant and comprehensive; the screening criteria were excellent in sensitivity and reasonable in specificity. The appropriateness of referrals was also good and matched with the panel opinion in a huge proportion. Nevertheless there is room for improvement on the communication between the QK Blog Committee and the external parties so that we could thoroughly understand how the students comply on the follow up schedule.

The QK project model also showed its close community integration for sustainability. The connection between QK and participating schools were outstanding. QK had close

collaboration with the schools and both parties shared common resources to support at-risk adolescents and to prevent potential problems. Nevertheless the communication between QK and external parties of referral were less strong which calls for a better communication protocol in the future.

Considering its excellence in service provision and community engagement, the QK Blog demonstrated a satisfactory strategic framework and implementation, which could be deemed as a successful model to identify, assess, and refer potential at-risk students in local community.

4.2 Recommendations

The project achieved promising results. Yet during the evaluation we identified some areas for potential improvements.

1. Screening questionnaire and criteria

   Although the screening had excellent sensitivity and were relevant to adolescent health, we found that using machine learning algorithms such as support vector machine could improve the screening process. Therefore we recommend reviewing the screening questionnaire and criteria for further improvement.

2. Time management and motivational activities in QK Clinic

   Time management was the weakest part in the QK Clinic assessment. The project management committee should rearrange the assessment stations so that waiting time between each assessment could be minimised (many students suggested a limit of 10 minutes). The motivational interviews could also be improved by providing confidence building and self-understanding activities.

3. Extensive follow-up for high-risk students

   As the referrals can only be made with the explicit agreement of the clients, a trusted relationship between the client and the service provider is vital in referral successfulness. The QK Blog may consider providing a more extensive follow-up scheme for at-risk students, especially those who are suspected to use illicit drugs.

4. Communication protocol with referral parties

   To facilitate long term follow up of the confirmed cases and to check for quality of compliance, it is advisable to establish a comprehensive communication protocol with external parties for referral so that the QK Blog would have a better understanding on the follow up status of cases.

5. Additional emphasis on recommendation in school profile report

   As suggested by frontline teachers, the school profile report would be even more useful if there is extensive emphasis on how the schools should proceed to improve students' physical and mental health. Therefore we suggest the QK Blog managing

committee to consider adding concrete recommendations for schools.

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Appendix I: Screening Questionnaire

個人資料

出生曰期： □年 □月 □日 (pick number from a list)
宗教信仰： □有 □沒有
性別： □男 □女 (provided by school)
就讀年級： □ (provided by school)
學生編號： □ (provided by school)

世界衛生組織身心健康指數

(甲)・下列有五句描寫感受的句子，我們想知道你在過去兩星期內有多少時間出現這種感受。請選擇一個最合適的答案，並圈選代表的數字。

例子：在過去兩星期，假如你有超過一半的時間感到開心愉快及精神奕奕，請圈選3號。

	在過去兩星期	所有時間	大多數時間	超過一半時間	少過一半時間	有些時間	完全沒有
1	我曾感到開心愉快及精神奕奕。	5	4	3	2	1	0
2	我會感到平靜和輕鬆。	5	4	3	2	1	0
3	我曾感到有活力及龍精虎猛。	5	4	3	2	1	0
4	我早上醒來感到清新及已有足夠的休息。	5	4	3	2	1	0
5	我的日常生活充滿會使我發生興趣的事物。	5	4	3	2	1	0

Reporting:
總分：_____
百分比分數：_____

(乙)・個人日常運動習慣

運動指數	回答	數值
你有否參加體育活動?	有	
	從不	1
與同年齡的人相比,我認為我的課餘運動時間	非常多	5
	相對多些	4
	一樣	3
	相對少些	2
	少很多	1
課餘時間流汗	總是	5
	經常	4
	偶爾	3
	很少	2
	從不	1
課餘時間參與運動	從不	1
	很少	2
	偶爾	3
	經常	4
	總是	5

參與最多的體育活動	回答	數值
你最常參與哪一種運動? (只選一項)	桌球, 風帆, 保齡球，高爾夫球，呼拉圈等	0.76
	羽毛球,單車,跳舞,游泳,網球，乒乓波，跳繩，跑步，溜冰，跳高，跳遠等	1.26
	拳擊,籃球,足球, 排球，體操，英式欖球,划船等	1.76
每週有幾小時參與這種運動?	< 1 小時	0.5
	1-2小時	1.5

	2-3小時	2.5
	3-4小時	3.5
	> 4小時	4.5
每年有幾個月參與這種運動?	< 1 月	0.04
	1-3 月	0.17
	4-6 月	0.42
	7-9 月	0.67
	> 9 月	0.92

第二多參與的運動資料	**回答**	**數值**
你第二常參與哪一種運動? (只選一項)	桌球, 風帆, 保齡球，高爾夫球，呼拉圈等	0.76
	羽毛球,單車,跳舞,游泳,網球，乒乓波，跳繩，跑步，溜冰，跳高，跳遠等	1.26
	拳擊,籃球,足球, 排球，體操，英式欖球,划船等	1.76
每週有幾小時參與這種運動?	< 1小時	0.5
	1-2小時	1.5
	2-3小時	2.5
	3-4小時	3.5
	> 4小時	4.5
每年有幾個月參與這種運動?	< 1月	0.04
	1-3月	0.17
	4-6 月	0.42
	7-9月	0.67
	> 9月	0.92

閒餘指數	**回答**	**分數**
課餘時間看電視	從不	1
	很少	2
	偶爾	3
	經常	4
	總是	5
課餘時間步行	從不	1
	很少	2
	偶爾	3
	經常	4
	總是	5
課餘時間踏單車	從不	1
	很少	2
	偶爾	3
	經常	4
	總是每年有幾個月參與這種運動?	5
你每天從家裡、學校或購物的地方來回要花多少分鐘步行或踏單車？	< 5分鐘	1
	5-15分鐘	2
	15-30分鐘	3
	30-45分鐘	4
	> 45分鐘	5

(C)・ Lifestyle生活習慣

In the past six months:

	Yes有	No否
1. Have you been late for school for more than 5 times? 你有冇返學遲到超過5次?	1	0
2. Have you been to karaokes or cybercafés? 你有冇去過唱K或蒲網吧?	1	0
3. Have you ever been out all night with friends? 你有冇試過蒲通頂?	1	0
4. Have you ever skipped class / refused to go to school / played truant? 你有冇逃過學?	1	0
5. Do you smoke / have a habit of smoking? 你有冇食煙的習慣?	1	0
6. Do you drink alcohol / have a habit of drinking alcohol? 你有冇飲酒的習慣?	1	0
7. Are you often sad? 你有冇成日唔開心?	1	0
8. Do you often have trouble sleeping? 你有冇經常失眠?	1	0
9. Have you ever tried any drugs that give you an emotional high and excitement? 你有冇食過任何藥，令自己好HIGH、情緒高漲同興奮?	1	0
10. Have you ever felt unusually irritable? 你有冇感到好暴躁?	1	0
11. Have you had any memory loss? / Do you have any deterioration in your memory? 你有冇出現冇記性?	1	0
12. Have you experienced a slowing down in your thinking? 你有冇覺得諗嘢變得好慢?	1	0
13. Do you often feel anxious / have anxiety symptoms? 你有冇出現情緒焦慮？	1	0
14. Have you thought about or tried to kill yourself? 你有冇出現過自殺的念頭？	1	0

Reporting:

總分：_____

(D)・Nutrition and Social Network營養與社交

1. Do you eat fruit and veggies every day? 你有冇每日食菜同生果?	Yes 0	No 1
2. In the last 30 days, have you tried to lose weight by taking laxatives or diet pills or by causing yourself to vomit? 响過去30日內，你有冇試過扣喉、食瀉藥或者食減肥藥嚟減肥?	Yes 1	No 0
3. Is there violence in your family? 你屋企有冇家庭暴力?	Yes 1	No 0
4. Do you have family members who smoke at home? 你屋企有冇人食煙?	Yes 1	No 0
5. Do you have family members who drink alcohol at home? 你屋企有冇人飲酒?	Yes 1	No 0
6. Do you have family members who take illicit drugs / use substance at home? 你屋企有冇人吸毒(high嘢)?	Yes 1	No 0
7. Do you go out with your family often? 你有冇成日同屋企人出街?	Yes 0	No 1
8. Do you feel that your parents care for you? 你覺得你阿爸阿媽有冇關心你?	Yes 0	No 1
9. Do you like school? 你鐘唔鐘意返學?	Yes 0	No 1
10. Do you have a teacher who cares about you? 你覺得有冇老師關心你?	Yes 0	No 1
11. Do you have friends at school? 你係學校有冇friend?	Yes 0	No 1

Reporting:

總分：_____

Appendix II: Evaluation Questionnaire

QK － 青年計劃展光華－ 意見評估問卷

請細心讀題，並選出你認為最適合的答案。
這份不記名的問卷只作評估用途，所有資料全部保密。

	非常不同意	不同意	同意	非常同意	不適用
1.是次活動內容設計合理	□	□	□	□	□
2.是次活動時間安排有條理	□	□	□	□	□
3.我認真參與所有測試環節	□	□	□	□	□
4.我能夠有效地和評估員交流	□	□	□	□	□
5.是次活動讓我對自己有了很多的認識	□	□	□	□	□
6.是次活動讓我意識到自己的不足	□	□	□	□	□
7.是次活動鼓勵我可以做得更好	□	□	□	□	□
8.是次活動幫我更有信心面對將來	□	□	□	□	□
9.總得來說，我對是次活動滿意	□	□	□	□	□

10. 你對是次活動最不滿意的環節是：
□ 回答問卷 □ 體能測試 □ 與社工／醫生溝通 □ 等待時間過長
□ 其他，請注明：_____

11. 你希望哪些地方還可以做出改進？
□ 時間安排 □ 測試方式 □ 地點選擇 □ 私密性 □ 溝通與反饋
□ 其他，請注明：_____

謝謝您的合作！

－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－

性別：_____ 年齡：_____ 年級：_____

Appendix III: Focus groups for QK Blog evaluation

Purpose

Assess students' opinion about QK Blog in the following areas:

a. Content and design
b. Time arrangement
c. Communication with professionals (social workers / doctors)
d. Perceived benefits of QK Blog
e. Areas for improvement

Discussion guide

1. Opening remark
    a. Emphasise on confidentiality
    b. Remind the discussion is open-ended and without any model answer

2. Evaluation of QK Blog
    a. Areas students' like / agree
        i. Seeing that some of you think that the design and content of the programme is reasonable, could you please describe why you think so?
        ii. QK Blog could encourage you to do better. In what part did the encouragement come from?
        iii. Some of you think that QK Blog could help understand your own weakness but some disagree, could you please describe how QK Blog helped? For those disagreed, could you please tell us how could we help in this area?

    b. Areas students dislike / disagree and rooms for improvements
        i. Some of you don't think you could effectively communicate with the evaluators, what made you feel so?
        ii. What is your least favourable part in QK Blog? Please describe the elements that made you dislike / uncomfortable. How could we improve that part?
        iii. In what areas could we improve the QK Blog service? How could we improve?

(Underlined wordings would be changed according to students' response in questionnaire)