

Subjective Outcome and Objective Outcome Evaluation Findings:

Insights from a Chinese Context

Daniel T.L. Shek

The Hong Kong Polytechnic University

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Running Head: Convergence of subjective and objective outcomes

## Abstract

*Objective:* As there are few studies examining the relationship between subjective and objective outcome evaluation findings, this study investigated the linkage between these two types of outcomes in the Chinese culture. *Method:* In an experimental study, 3,298 Chinese secondary school students responded to the Chinese Positive Youth Development Scale assessing objective outcome (CPYDS) at pretest and posttest. They also responded to the Chinese Subjective Outcome Scale (CSOS) assessing subjective outcome at posttest. *Results:* The CSOS total and subscale scores were significantly correlated with posttest CPYDS scores and difference scores; they also predicted changes in CPYDS scores across time. *Conclusions:* The present findings demystify the common belief that findings based on the client satisfaction approach are unrelated to objective outcome evaluation findings.

**Keywords:** subjective outcome evaluation; objective outcome evaluation; client satisfaction approach; Chinese adolescents; positive youth development

## Subjective Outcome and Objective Outcome Evaluation Findings:

### Insights from a Chinese Context

Both objective outcome evaluation and subjective outcome evaluation are commonly employed by social workers to evaluate social work services. In the case of objective outcome evaluation, measures of psychosocial functioning, such as positive changes in the behavioral and attitudinal domains of the program participants are assessed. Validated scales such as self-report rapid assessment instruments are commonly used in the context of objective outcome evaluation.

On the other hand, subjective outcome evaluation examines program participants' perceived satisfaction with the program attributes and/or perceived effectiveness of a program. Specifically, client satisfaction survey has been commonly used to assess client satisfaction and perceived effectiveness of the program. Although some researchers used a set of items (e.g. Ankuta & Abeles, 1993; Kocher, Steadman, Briggs, Sterett & Hawkins, 2004; Krupat, Bell, Krwttz, Thom & Azari, 2001; Scott, Smiddy, Feuer & Merikansky, 1996) or even a single item (e.g. Elkadry, Kenton, FitzGerald, Shott & Brubaker, 2003) to assess client satisfaction, standardized rating scales have been developed to gauge client satisfaction, such as the Medical Interview Satisfaction Scale (Little et al., 2001), Consumer Satisfaction Questionnaire (Holcomb, Adams, Ponder & Reitz, 1989) and Client Satisfaction Questionnaire (Attkisson & Zwick, 1982; Vandiver & Jordan, 1995; Walsh & Lord, 2004). Some of these structured rating scales are multi-dimensional in nature and they could yield both global and dimensional scores on client satisfaction.

Although subjective outcome evaluation via the client satisfaction approach is a popular strategy utilized by human service professionals to assess the perceptions of clients regarding the program, including its format, implementation process, workers and benefits, Weinbach (2005) pointed out that there are several problems of client satisfaction surveys. First, the

clients may not tell the truth, thus creating biases in the findings. Second, as those who return the feedback forms are those who stay until the end of the program, there will be completion bias involved. In addition, it would be difficult to obtain random samples based on the program participants. Third, as the respondents may feel grateful or pleased to be asked, bias may be introduced by “I appreciate your asking” phenomenon. Fourth, the generally favorable results based on the subjective outcome evaluation approach may constitute positive bias. Finally, there is the common illusion that client satisfaction equals to successful intervention. Regarding the last problem, Weinback (2005) explicitly warned that “the major problem of using client-satisfaction surveys as indicators of intervention effectiveness, or of quality of a service, is that satisfaction with services and successful intervention are not the same” (p.38). Similarly, O’Neal (1999) criticized that client satisfaction approach could not yield objective and definitive findings regarding program effectiveness; Walsh and Lord (2004) also remarked that “client satisfaction should not be used as an all-encompassing method of service evaluation or quality assurance” (p.50).

The argument that perceived satisfaction with a program and/or perceived effectiveness by the client may not correspond to positive change in objective outcomes is definitely a fatal criticism for the client satisfaction approach. Surprisingly, a survey of the literature shows there are few studies supporting this criticism. For instance, in a review of 27 studies on the treatment of overactive bladder patients, Abrams, Artibani, Gajewski and Hussain (2006) showed that the computation of correlations between subjective and objective outcomes only occurred in one study. Furthermore, although there are studies examining both objective and subjective outcome measures in the medical and health fields, there are comparatively fewer related studies in the fields of education and social work.

Another limitation of the literature in this field is that the existing findings are not conclusive. Generally speaking, three groups of studies could be identified in the literature. In

the first group of studies, significant findings suggesting a positive relationship between subjective and objective outcome evaluation findings were reported (Ankuta & Abeles, 1993; Edwards, Playford, Hobart & Thompson, 2002; Scott et al., 1996). These findings are generally consistent with the conclusion of Nabors, Weist, Reynolds, Tashman and Jackson (1999) that “client perceptions of whether service delivery was well-executed, beneficial, and resulted in improved functioning (e.g., in school or with family members; increased self-esteem) are important indices of treatment quality” (p.230).

In the second group of studies, research findings showed that objective outcomes and subjective outcomes were unrelated. Vandiver and Jordan (1995) showed that there was no significant relationship between satisfaction with service and objective family empowerment at the post-intervention level among 22 family members of Laoian refugees receiving psychiatric treatment. Walsh and Lord (2004) found that parents’ level of satisfaction with the social work intervention and their change in empowerment was unrelated (N=19) and remarked that “a small number of studies have used other outcome measures and failed to find a strong relationship between higher client satisfaction and other indicators of successful intervention” (p. 41).

In the final group of studies, mixed findings on the relationship between subjective and objective outcomes in a single study were reported. Attkisson and Zwick (1982) reported that while client satisfaction scores were significantly correlated with clients’ self-reported symptoms, satisfaction scores were not related to therapists’ ratings on symptoms. In a 2-year follow-up study with 202 patients receiving anterior cruciate ligament reconstruction, Kocher et al. (2004) also reported mixed findings on the relationship between objective outcome and subject outcome measures. Elkadry et al. (2003) also found that patient satisfaction was significantly related to some subjective outcomes (e.g. perceived goal achievement, feeling prepared for surgery) and objective testing, but not significantly related to other subjective

outcomes (e.g. self-reported health status) and objective cure three months after surgery.

Besides inadequacy of studies and inconclusiveness of research findings in this area, there are many methodological problems intrinsic to the existing studies. First, small sample size was a problem commonly seen in the literature. The most extreme examples are that there were only 19 and 22 cases in the studies reported by Walsh and Lord (2004) and Vandier and Jordan (1995), respectively. Other examples are that there were only 32 cases in Tsai et al.'s study (2002), 78 subjects in Elkadry et al.'s study (2003), 83 subjects in McNeill, Nicholas, Szechy and Lach's study (1998), and 100 cases in the study by LaSaLa (1997). One obvious problem associated with a small sample study is the problem of power (Kraemer & Thieman, 1987). In particular, the use of multivariate statistical tests in small samples increases the probability that the obtained data are due to chance effect.

Second, although generic client satisfaction questionnaires such as the Client Satisfaction Questionnaire (Attkisson & Zwick, 1982) were utilized in some of the existing studies, it can be argued that such generic measures may not be specific enough to assess subjective outcomes in social services programs in unique contexts. For example, in positive youth development programs, it can be argued that perceived benefits with reference to different positive youth development constructs should be assessed by a subjective outcome evaluation tool that is specifically designed for the service context (Shek, Lee, Siu & Ma, 2007). Moreover, mixed findings in the literature may also be due to the fact that some client satisfaction measures were not validated.

Third, literature review shows that the relationships between different aspects of client satisfaction (e.g., satisfaction with the program versus satisfaction with the implementation process) and objective outcomes are under-researched. Ragins, Cotton and Miller (2000) showed that while perceived effectiveness of a formal mentoring program and satisfaction with mentor were significantly associated with objective measures of job satisfaction and

organizational commitment, satisfaction with mentor was a stronger predictor of objective outcomes. McNeill et al. (1998) also showed that satisfaction with the program at the global versus specific levels may generate different pictures regarding the relationships between subjective outcomes and objective outcomes.

Fourth, although some studies have examined the relationship between subjective outcome and objective outcomes at the post-treatment stage only (e.g. Ankuta & Abeles, 1993; Edwards et al., 2002; Scott et al., 1996), few researchers have examined the relationship between subjective outcomes and changes in objective outcomes in the program participants longitudinally (e.g. Attkisson & Zwick, 1982). In fact, it is argued that investigation of the relationship between subjective outcome indicators at posttest and changes in the objective outcome indicators from pretest to posttest can generate a more dynamic picture on the linkage between subjective outcome evaluation findings and objective outcome evaluation findings.

The final methodological limitation is that most of the existing studies have been conducted in Western societies and published scientific studies in this area do not exist in the Chinese culture, except the study by Shek et al. (2007). From a cross-cultural perspective, the lack of related research data in the Chinese context would motivate one to ask whether the picture on the linkage between subjective outcome evaluation and objective outcome evaluation would be different from those reported in the Western literature. There are two factors in Chinese culture that are relevant to this question. First, Chinese people strongly emphasize the “doctrine of the mean” and “social harmony” in the Chinese culture (Yang, 1981). According to the “doctrine of the mean”, expression of extreme experiences (e.g., strong satisfaction or dissatisfaction) is undesirable and it is advisable to take a balanced standpoint (e.g., neither satisfied nor dissatisfied). For respondents subscribing to this cultural belief, they would have the tendency to choose the responses at the centre of a subjective

outcome evaluation rating scale. Concerning interpersonal harmony, Chinese people are socialized not to criticize others but to give face to others in social contexts. As such, giving bad ratings in subjective outcome evaluation would not be encouraged as this would ruin the relationship between the client and worker. It can be argued that these two factors may create positive bias in subjective outcome findings that will dilute the relationship between objective and subjective outcomes. Second, as Chinese people tend to depend on the semantic meaning of the items in rating the targeted people or services (Chiu & Yang, 1987), positive response bias may occur if the items in the subjective outcome measure are semantically similar. Therefore, it would be interesting to ask how subjective outcome evaluation findings and objective outcome evaluation findings is related in the Chinese culture.

Against the above background, the present paper attempts to examine the relationship between subjective outcome evaluation and objective outcome evaluation findings based on the responses of students ( $N = 3,298$ ) participating in a positive youth development program entitled Project P.A.T.H.S. (Shek, 2006; Shek, Ma & Merrick, 2007). To promote holistic development in adolescents in Hong Kong, the Hong Kong Jockey Club Charities Trust has invited the author to be the Principal Investigator to lead a research team comprising academics from five universities in Hong Kong to develop a multi-year universal positive youth development program in the territory. In the project, a curricular-based positive youth development program was designed for Secondary 1 to Secondary 3 students. The teaching units were developed with reference to 15 positive youth development constructs including promotion of bonding, cultivation of resilience, promotion of social, emotional, cognitive, behavioral and moral competencies, development of self-determination, promotion of spirituality, development of self-efficacy, development of clear and positive identity, promotion of beliefs in the future, provision of opportunities for prosocial involvement, fostering prosocial norms and recognition for positive behavior. The content of the programs



in different grades can be seen in Shek (2006) and Shek, Ma and Merrick (2007).

During the program implementation process, the program was implemented by teachers and/or social workers depending on the needs and manpower situation in each school. For social workers implementing the program, they could be school social workers, youth workers in integrated youth centers or social workers with expertise in youth work. In some schools, social workers implemented the program alone. In other schools, social workers collaborated with the teachers to implement the program. For the students joining the program, objective outcome evaluation data were collected at both pretest and posttest based on the Chinese Positive Youth development Scale (CPYDS, Shek, Siu & Lee, 2007). In addition, subjective outcome evaluation data based on the Chinese Subjective Outcome Scale (CSOS) were collected at posttest.

Two research questions were addressed in this study. (1) What is the relationship between different subjective outcome measures assessed by the CSOS and objective outcome measures indexed by the CPYDS score at posttest and the difference scores? (2) What is the nature of the predictive relationship between subjective outcomes assessed at posttest and changes in the objective outcome measures over time? It was expected that if subjective outcome evaluation could not reflect objective outcome evaluation in a sensitive manner, the concurrent and predictive relationships between the two domains should be weak.

## Method

### *Participants and Procedures*

Amongst the 227 schools participating in the Full Implementation Phase of Project P.A.T.H.S., 24 pairs of schools with similar characteristics were randomly selected to join the evaluation study, with one school in each pair randomly assigned to the experimental group and another school randomly assigned to the control group. The details of the sampling procedures and composition of the experimental and control groups can be seen in Shek et al.

(2008). The findings reported in this study were derived from 23 schools joining the experimental group (one school withdrew after commencement of the program for unforeseen reasons) in the first year of the Full Implementation Phase. A total of 4,121 questionnaires containing the objective outcome measure were collected at pretest and 3,915 questionnaires containing both subjective and objective outcome measures were collected at posttest. Amongst them, 3,792 and 3,886 questionnaires were valid for analyses at pretest and posttest, respectively. After successful matching by date of birth and the first four digits of the Hong Kong Identity Cards, there were 3,298 matched questionnaires for the present analyses.

At pretest and posttest, the purpose of the study was mentioned, and confidentiality of the data collected was repeatedly emphasized to all of the students in attendance on the day of testing. This study had been approved by an institutional review board and parental, school as well as student consent had been obtained prior to data collection. All participants responded to all scales in the questionnaire in a self-administration format. Adequate time was provided for the participants to complete the questionnaire. A trained research assistant was present throughout the administration process. At pretest and posttest, the respondents took roughly 30 minutes to complete the questionnaire. This requirement could be regarded as low when compared with other studies in which the respondents took 45 to 60 minutes to complete the questionnaire (Shek, 2007, 2008). Besides, a small souvenir was given to each respondent to motivate them to complete the questionnaire. Pretest assessment using the CPYDS was carried out before the program commenced whereas posttest assessment using the CSOS and CPYDS was carried out after the program was completed. The duration between pretest to posttest was around 9 months.

### *Instruments*

#### *Objective Outcome Assessment*

At pretest and posttest, the participants were invited to respond to a questionnaire

containing measures of positive youth development, including the Chinese Positive Youth Development Scale (CPYDS, Shek, Siu & Lee, 2007). Based on reliability analyses of both pretest and posttest data in the present study, there were some modifications in the composition of the items of the 15 subscales of the CPYDS as follows:

1. Bonding Subscale (6 items):  $\alpha = .83$  and  $.85$  at pretest and posttest.
2. Resilience Subscale (6 items):  $\alpha = .82$  and  $.86$  at pretest and posttest.
3. Social Competence Subscale (7 items):  $\alpha = .83$  and  $.86$  at pretest and posttest.
4. Emotional Competence Subscale (6 items):  $\alpha = .83$  and  $.85$  at pretest and posttest.
5. Cognitive Competence Subscale (6 items):  $\alpha = .84$  and  $.86$  at pretest and posttest.
6. Behavioral Competence Subscale (modified 5 items):  $\alpha = .76$  and  $.80$  at pretest and posttest.
7. Moral Competence Subscale (6 items):  $\alpha = .78$  and  $.78$  at pretest and posttest.
8. Self-Determination Subscale (5 items):  $\alpha = .76$  and  $.80$  at pretest and posttest.
9. Self Efficacy Subscale (modified 2 items):  $\alpha = .50$  and  $.56$  at pretest and posttest.
10. Beliefs in the Future Subscale (modified 3 items):  $\alpha = .82$  and  $.83$  at pretest and posttest.
11. Clear and Positive Identity Subscale (7 items):  $\alpha = .84$  and  $.85$  at pretest and posttest.
12. Spirituality Subscale (7 items):  $\alpha = .88$  and  $.90$  at pretest and posttest.
13. Prosocial Involvement Subscale (5 items):  $\alpha = .83$  and  $.83$  at pretest and posttest.
14. Prosocial Norms Subscale (5 items):  $\alpha = .77$  and  $.80$  at pretest and posttest.
15. Recognition for Positive Behavior Subscale (4 items):  $\alpha = .76$  and  $.80$  at pretest and posttest.

Although alpha values for the Self-Efficacy Scale were not high, the mean inter-item correlation coefficient at pretest ( $r = .34$ ) and posttest ( $r = .39$ ) were acceptable (Schmitt, 1996). The CPYDS scale score at pretest or posttest was computed by averaging the mean score in

each subscale. To examine the linkage between subjective outcome findings and objective outcome findings, two objective outcome evaluation indicators were used in this study. First, the CPYDS total score at posttest was used. Second, difference score (posttest score minus pretest score, Attkisson & Zwick, 1982) was employed.

### Subjective Outcome Evaluation

The 20-item Chinese Subjective Outcome Scale (CSOS) was used to assess the participants' satisfaction with the program and instructor as well as their perceived benefits of the program at posttest. There are twenty items in this scale measuring several areas: a) perceived program implementation quality (6 items); b) perceived program program content (3 items); c) perceived quality of the workers (4 items); d) degree of sharing of the program with others (2 items), and e) perceived effectiveness of the program (5 items). Previous findings based on a modified 15-item version of the scale showed that the scale possessed good psychometric properties (Shek et al., 2007).

### Results

The findings showed that the CSOS was internally consistent in the present sample ( $\alpha = .97$ ; mean inter-item correlation = .62). As the items of the CSOS were highly correlated, a non-orthogonal factor extraction procedure (alpha factoring) was used to analyze the responses of the participants to the items of the scale, yielding two factors with eigen values exceeding unity, explaining 68.30% of the variance. The two-factor solution was then rotated to a Promax criterion for interpretation. Factor I included item 7 to item 20 which was labeled Perceived Program Attributes (CSOS-Program), explaining 61.81% of the variance. The second factor included item 1 to item 6 which could be labeled Perceived Program Implementation (CSOS-Process), explaining 6.49% of the variance. To examine the stability of the factors derived from the scale, analyses based on coefficients of congruence were computed by randomly splitting the total sample into two sub-samples. Results showed that

the related coefficients of congruence were high (coefficients of congruence = .99 and .99 for CSOS-Program and CSOS-Process, respectively,  $p < .001$  in all cases). The findings on the pattern matrix of the analyses in the three samples can be seen in Table 1.

Pearson correlation coefficients on the relationships between the subjective outcome measures and objective outcomes indexed by the CPYDS scores at posttest and the difference score are shown in Table 2. Besides the total score, CSOS-Process subscale score and CSOS-Program score by summing up relevant items in the respective scales were used. Furthermore, as it is conceptually interesting to look at the specific relationship between perceived effectiveness of a program and objective outcomes, a measure based on the sum of the items on effectiveness (Item 16 to item 20) was also used to examine the relationship between perceived effectiveness of the program and the objective outcome measures. To guard against the possibility of inflated Type 1 error, a two-tailed multistage Bonferroni procedure was used to obtain the data related to correlations (Larzelere & Mulaik, 1977) and the Bonferroni-corrected correlation coefficients are shown in Table 2. Results showed that the subjective outcome measures were significantly correlated with posttest CPYDS scores (with moderate effect size) and difference scores (with low effect size).

As there is variability in the responses of the participants, the approach based on difference score may be criticized as unreliable. Hence, in order to examine the effect of subjective outcome measures on the *change* in the CPYDS score, another approach based on hierarchical multiple regression analyses involving two steps was performed. In Step 1, the effect of Time 1 CPYDS score on Time 2 CPYDS score was removed. In Step 2, the effect of subjective outcome measures on the residualized Time 2 CPYDS score was assessed. As shown in Table 2, all subjective outcome measures had significant predictive effect on CPYDS posttest score after controlling the effect of CPYDS pretest score. Although the CPYDS pretest score still had significant predictive effect on CPYDS posttest score, its

predictive contribution was reduced by the presence of the subjective outcome measures. Based on the guideline of Cohen (1992), the amount of variance explained could be regarded as in the range of moderate effect size.

#### DISCUSSION AND APPLICATIONS TO SOCIAL WORK PRACTICE

In response to the general criticism that subjective outcome evaluation cannot adequately reflect objective outcomes and the paucity of research findings in the social work field, the linkage between subjective outcome and objective outcome evaluation measures was examined in a universal positive youth development program implemented in Hong Kong. With reference to the limitations of the studies in the field, there are several strengths of this study. First, the evaluation findings are based on a large sample size (N=3,298). This characteristic of the study is in sharp contrast to the existing studies in the field where small samples were commonly employed. Second, validated objective and subjective outcome assessment tools were used in this study. In particular, factor analytic findings showed that the two dimensions intrinsic to the subjective outcome measure were stable. In addition, as the subjective outcome assessment tool was specifically developed for the P.A.T.H.S. Project, it is different from most of the existing studies in which generic measures of client satisfaction were used. Third, specific aspects of subjective outcome evaluation, including perceived program implementation (CSOS-Process) and perceived program attributes (CSOS-Program), were covered in the study. Fourth, in contrast to the commonly used approach that focuses only on the relationship between subjective and objective outcome measures at posttest, the present study examined the issue with reference to difference scores across pretest and posttest and changes in objective outcome measures over time.

The present study clearly demonstrates the linkage between subjective outcome evaluation findings and objective outcome evaluation findings. Pearson correlation analyses showed significant relationships between the subjective outcome measures assessed at

posttest and objective outcomes (indexed by CPYDS posttest score and difference score between pretest and posttest). It is noteworthy that the significant correlation coefficients were not due to inflated Type 1 error. In addition, hierarchical multiple regression analyses showed that subjective outcome measures significantly predicted changes in the CPYDS scores over time. Furthermore, the standardized regression coefficients showed medium effect size (Cohen, 1992). In short, the present findings could be regarded as robust in nature.

In addition to Shek et al.'s study (2007), this study is another pioneer study in the Chinese culture examining the linkage between subjective outcome and objective outcome evaluation findings. In a narrower context, the present findings provide further insight to the possible interpretation of the positive subjective outcome evaluation findings found in the Experimental Implementation Phase of the Project P.A.T.H.S. (Shek & Ma, 2007) and they reinforce the conclusion that there are positive program effects based on the subjective outcome findings. In a broader context, the present findings constitute interesting additions to the evaluation literature pertinent to the linkage between subjective and objective outcome measures in a cross-cultural context.

It is noteworthy that there are several limitations of the study. First, as both subjective outcome (CSOS) and objective outcome measure (CPYDS) used in the present study were self-administered and paper-and-pencil tools were used, the significant correlation between these two domains could be interpreted as a reflection of common method variance. It would be helpful if additional data collection methods (e.g., interviews and observations) could be used to clarify this issue. Second, as the findings were based solely on quantitative rating scales, it would be illuminating if the clients' perceptions of the implementation process of the program, qualities of worker and perceived program effectiveness can be further investigated through open-ended questions and/or interviews. Third, it is noteworthy that objective outcome of positive youth development is assessed by self-report measure via the CPYDS.

Although it is not uncommon for researchers to use self-report of behavior (e.g., self-report severity of psychological symptoms, beliefs and attitudes), the limitation of using self-report measures of behavior should be acknowledged. In future, the use of information collected from different sources (e.g., teacher or parent assessment of child's positive development) would strengthen objective outcome assessment from a multiple perspective. The use of information derived from official records such as academic performance, drop-out, or violation in compliance in schooling may also be helpful. Finally, as the duration between the pretest and the posttest was less than one year, it would be exciting if the relationship between the subjective outcome measures and changes in the objective outcome measures over a longer period of time could be examined in future.

There are several implications of the present findings for social work practice and social work research. First, the present findings clearly refute the common criticism against subjective outcome evaluation that subjective outcome evaluation findings are unrelated to objective outcome evaluation findings. In fact, the present study showed that there is an intimate relationship between these two domains. As such, social workers should not uncritically accept criticisms against the subjective outcome evaluation approach and they should appreciate the value of subjective outcome evaluation via the client satisfaction approach.

The second implication is that subjective outcome evaluation should receive more attention in social work education. As the workload of social work professionals is usually very heavy in different settings, it is very likely that evaluation of social work practice is primarily assessed by the client satisfaction approach. For example, in response to the requirement of Service Quality Standard in Hong Kong that the service provider using public funding should gauge the outcome of the service, nearly all agencies carry out client satisfaction survey as a routine measure to assess the delivered service. However, it is quite



disappointing to note that the topic on the relationship between objective outcome evaluation and subjective outcome evaluation is not adequately covered in the major textbooks of social work (e.g., Rubin and Babbie, 2007; Royse, 2004). Similarly, computer search of the Social Work Abstracts in June 2008 showed that there was no citation when the search terms of “client satisfaction” and “social work education” were used.

In conjunction with the previous findings (e.g., Attkisson & Zwick, 1982), the third implication of the findings is that the use of a structured and well-conceived measure of subjective outcome is important and the subjective outcome evaluation findings based on such measures are likely to correlate well with objective outcome evaluation measures. According to Royse (2004), the lack of standardized assessment tools for conducting client satisfaction survey introduces biases for the client satisfaction approach. As such, he recommended the use of assessment tool with known reliability and validity which would “eliminate many of the problems found in hastily designed questionnaires” (p. 265). There are many examples of validation studies of client satisfaction assessment tools in the social work context (e.g., McMurty & Hudson, 2000). Basically, the findings suggest that the use of subjective outcome evaluation via a structured and quantitative approach (not unstructured narrative or postmodern methods) is useful.

As there are very few research studies examining the linkage between subjective outcome evaluation and objective outcome evaluation in the human service literature, the fourth implication of the present study is that social work researchers should conduct more research in this area. Essentially, research studies in three areas are desperately needed. First, more research is needed to examine the relationship between different aspects of subjective outcomes (e.g., perceived effectiveness of the program, satisfaction with the program, satisfaction with the worker ...etc) and objective outcomes. In the context of positive youth development, for example, it is important to know whether the program attributes and the

program implementers are equally important in predicting changes in the program participants. In particular, it would be important to explore the relationship between the degree of fun and interaction in the program and objective outcomes. The answers to these questions can help social work practitioners understand why positive objective outcomes take place. Second, as most of the research studies in this area are based on the perspective of the program participants in the assessment of objective outcomes, inclusion of the assessment of the therapists (e.g., workers' ratings) and significant-others in the assessment of change can provide a more comprehensive picture on the issue. Finally, as conceptual models on the linkage between objective outcome evaluation and subjective outcome evaluation are not well-developed, research in this area would be important not just for social workers, but also for evaluators in human services.

## References

- Abrams, P., Artibani, W., Gajewski, J. B., & Hussain, I. (2006). Assessment of treatment outcomes in patients with overactive bladder: Importance of objective and subjective measures. *Urology*, *68*, 17-28.
- Ankuta, G. Y., & Abeles, N. (1993). Client satisfaction, clinical significance, and meaningful change in psychotherapy. *Professional Psychology: Research and Practice*, *24*, 70-74.
- Attkisson, C. C., & Zwick, R. (1982). The client satisfaction questionnaire: Psychometric properties and correlations with service utilization and psychotherapy outcome. *Evaluation and Program Planning*, *5*, 233-237.
- Chiu, C. Y., & Yang, C. F. (1987). Chinese subjects' dilemmas: Humility and cognitive laziness as problem in using rating scales. *Bulletin of the Hong Kong Psychological Society*, *18*, 39-50.
- Cohen, J. (1992). A power primer. *Psychological Bulletin*, *112*, 155-159.
- Edwards, S. G. M., Playford, E. D., Hobart, J. C., & Thompson, A. J. (2002). Comparison of physician outcome measures and patients' perception of benefits of inpatient neurorehabilitation. *British Medical Journal*, *324*, 1493.
- Elkadry, E. A., Kenton, K. S., FitzGerald, M. P., Shott, S., & Brubaker, L. (2003). Patient-selected goals: A new perspective on surgical outcome. *American Journal of Obstetrics and Gynecology*, *189*, 1551-1558.
- Holcomb, W. R., Adams, N. A., Ponder, H. M., & Reitz, R. (1989). The development and construct validation of a consumer satisfaction questionnaire for psychiatric inpatients. *Evaluation and Program Planning*, *12*, 189-194.
- Kocher, M. S., Steadman, J. R., Briggs, K. K., Sterett, W. I., & Hawkins, R. J. (2004). Relationships between objective assessment of ligament stability and subjective assessment of symptoms and function after anterior cruciate ligament reconstruction.

- The American Journal of Sports Medicine*, 32, 629-634.
- Kraemer, H. C., & Thieman, S. (1987). *How many subjects? Statistical power analysis in research*. CA: Newbury Park.
- Krupat, E., Bell, R. A., Krwttz, R. L., Thom, D., & Azari, R. (2001). When physicians and patients think alike: Patient-centered beliefs and their impact on satisfaction and trust. *The Journal of Family Practice*, 50, 1057-1062.
- Larzelere, R. E., & Mulaik, S. A. (1977). Single-sample tests for many correlations. *Psychological Bulletin*, 84, 557-569.
- LaSala, M.C. (1997). Client satisfaction: consideration of correlates and response bias. *Families in Society*, 31, 54-64.
- Little, P., Everitt, H., Williamson, I., Warner, G., Moore, M., Gould, C., Ferrier, K., & Payne, S. (2001). Observational study of effect of patient centredness and positive approach on outcomes of general practice consultations. *British Medical Journal*, 323, 908-911.
- McMurty, S. L., & Hudson, W. W. (2000). The Client Satisfaction Inventory: Results of an initial validation study. *Research on Social Work Practice*, 10, 644-663.
- McNeill, T., Nicholas, D., Szechy K., & Lach, L. (1998). Perceived outcome of social work intervention: Beyond consumer satisfaction. *Social Work in Health Care*, 26, 1-18.
- Nabors, L. A., Weist, M. D., Reynolds, M. W., Tashman, N. A., & Jackson, C. Y. (1999). Adolescent satisfaction with school-based mental health service. *Journal of Child and Family Studies*, 8, 229-236.
- O'Neal, P. D. (1999). Methodological problems associated with measuring consumer satisfaction in mental health field. *Australian Social Work*, 52, 9-15.
- Ragins, B. R., Cotton, J. L., & Miller, J. S. (2000). Marginal mentoring: The effects of type of mentor, quality of relationship, and program design on work and career attitudes. *Academy of Management Journal*, 43, 1177-1194.

- Royse, D. (2004). *Research methods in social work*. Chicago: Nelson-Hall.
- Rubin, A., & Babbie, E. (2007). *Essential research methods for social work*. Belmont, Calif.: Sage.
- Schmitt, N. (1996). Uses and abuses of coefficient alpha. *Psychological Assessment*, 8, 350-353.
- Scott, I. U., Smiddy, W. E., Feuer, W., & Merikansky, A. (1996). Vitreoretinal surgery outcomes: Results of a patient satisfaction/ functional status survey. *Ophthalmology*, 105, 795-803.
- Shek, D. T. L. (2006). Construction of a positive youth development program in Hong Kong. *International Journal of Adolescent Medicine and Health*, 18, 299-302.
- Shek, D. T. L. (2007). A longitudinal study of perceived differences in parental control and parent-child relational qualities in Chinese adolescents in Hong Kong. *Journal of Adolescent Research*, 22, 156-188.
- Shek, D. T. L. (2008). Economic disadvantage, perceived family life quality, and emotional well-being in Chinese adolescents: A longitudinal study. *Social Indicators Research*, 85, 169-189.
- Shek, D. T. L., Lee, T. Y., Siu, A., & Ma, H. K. (2007). Convergence of subjective outcome and objective outcome evaluation findings: Insights based on the Project P.A.T.H.S. *TheScientificWorldJOURNAL*, 7, 258-267.
- Shek, D. T. L., & Ma, H. K. (2007). Subjective outcome evaluation of Project P.A.T.H.S.: Findings based on the perspective of the program participants. *TheScientificWorldJOURNAL*, 7, 47-55.
- Shek, D. T. L., Ma, H. K., & Merrick, J. (Eds.). (2007). *Positive youth development: Development of a pioneering program in a Chinese context*. London: Freund.
- Shek, D. T. L., Siu, A., & Lee, T. Y. (2007). The Chinese Positive Youth Development Scale:

- A validation study. *Research on Social Work Practice*, 17, 380-391.
- Shek, D. T. L., Siu, A. M. H., Lee, T. Y., Cheung, C. K., & Chung, R. (2008). Effectiveness of the Tier 1 Program of Project P.A.T.H.S.: Objective outcome evaluation based on a randomized group trial. *TheScientificWorldJOURNAL: TSW Holistic Health & Medicine*, 8, 4-12
- Tsai, C. C., Kau, H. C., Kao, S. C., Hsu, W. M., & Liu, J. H. (2002). Efficacy of probing the nasolacrimal duct with adjunctive Mitomycin-C for epiphora in adults. *Ophthalmology*, 109, 172-174.
- Vandiver, V., & Jordan, C. (1995). Family empowerment and service satisfaction: An exploratory study of Laotian families who care for a family member with mental illness. *Psychiatric Rehabilitation Journal*, 19, 47-55.
- Walsh, T., & Lord, B. (2004). Client satisfaction and empowerment through social work intervention. *Social Work in Health Care*, 38, 37-56.
- Weinbach, R. W. (2005). *Evaluating social work services and programs*. Boston: Allyn and Bacon.
- Yang, K. S. (1981). Social orientation and individual modernity among Chinese students in Taiwan. *Journal of Social Psychology*, 113, 159-170.

Table 1: Factor structure of the Chinese subjective Outcome Scale (CSOS)

Item	Total Sample		Random Sub-Sample 1		Random Sub-Sample 2	
	F1	F2	F1	F2	F1	F2
1. The atmosphere of the class was good.	<i>-.09</i>	<i>.85</i>	<i>-.07</i>	<i>.84</i>	<i>-.09</i>	<i>.86</i>
2. There were many opportunities for students to exchange ideas during class.	<i>-.01</i>	<i>.85</i>	<i>.03</i>	<i>.82</i>	<i>-.07</i>	<i>.90</i>
3. I often had encouragement from the responses of classmates.	<i>.05</i>	<i>.82</i>	<i>.03</i>	<i>.84</i>	<i>.10</i>	<i>.78</i>
4. I think students actively participated in the class activities.	<i>.01</i>	<i>.81</i>	<i>.00</i>	<i>.83</i>	<i>.01</i>	<i>.79</i>
5. I think I actively participated in the class activities.	<i>.24</i>	<i>.57</i>	<i>.19</i>	<i>.63</i>	<i>.32</i>	<i>.50</i>
6. I think the discipline in class was good.	<i>.10</i>	<i>.64</i>	<i>.07</i>	<i>.67</i>	<i>.13</i>	<i>.59</i>
7. I think this course is very interesting.	<i>.55</i>	<i>.32</i>	<i>.53</i>	<i>.34</i>	<i>.58</i>	<i>.29</i>
8. I think this course encouraged me to reflect.	<i>.70</i>	<i>.16</i>	<i>.67</i>	<i>.19</i>	<i>.73</i>	<i>.13</i>
9. I like this course very much.	<i>.82</i>	<i>.02</i>	<i>.81</i>	<i>.03</i>	<i>.85</i>	<i>.02</i>
10. The instructors could arouse my interest in the course.	<i>.84</i>	<i>.04</i>	<i>.86</i>	<i>.02</i>	<i>.81</i>	<i>.06</i>
11. The instructor could arouse my learning motivation.	<i>.85</i>	<i>.03</i>	<i>.87</i>	<i>.02</i>	<i>.84</i>	<i>.03</i>
12. The instructor knew how to promote discussion and participation among the students.	<i>.79</i>	<i>.07</i>	<i>.79</i>	<i>.08</i>	<i>.79</i>	<i>.06</i>
13. I could get encouragement from the responses of the instructor.	<i>.83</i>	<i>.05</i>	<i>.84</i>	<i>.04</i>	<i>.80</i>	<i>.06</i>
14. I often share the things I have learned from the course with my friends.	<i>.60</i>	<i>.19</i>	<i>.65</i>	<i>.14</i>	<i>.53</i>	<i>.26</i>
15. I often share the things I have learned from the course with my family members.	<i>.59</i>	<i>.15</i>	<i>.61</i>	<i>.12</i>	<i>.56</i>	<i>.18</i>
16. I think this course can strength my ability to face the challenge of life.	<i>.89</i>	<i>-.01</i>	<i>.89</i>	<i>-.02</i>	<i>.88</i>	<i>-.01</i>
17. I think this course can strengthen my ability to face adversity.	<i>.89</i>	<i>-.03</i>	<i>.88</i>	<i>-.02</i>	<i>.91</i>	<i>-.04</i>
18. I think this course can increase my understanding about myself.	<i>.89</i>	<i>-.03</i>	<i>.88</i>	<i>-.02</i>	<i>.91</i>	<i>-.05</i>
19. I think this course can promote my overall development.	<i>.90</i>	<i>-.04</i>	<i>.89</i>	<i>-.02</i>	<i>.90</i>	<i>-.06</i>
20. Overall speaking, I think this course is helpful to me.	<i>.90</i>	<i>-.06</i>	<i>.90</i>	<i>-.05</i>	<i>.90</i>	<i>-.07</i>
Variance Explained	61.81	6.49	62.17	6.59	61.26	6.45
Reliability (Item 1 to Item 6)	.97		.97		.97	
Reliability (Item 7 to Item 20)		.91		.91		.91

F1=Factor 1. F2=Factor 2. The highest loading among the factors for an item is in italic.

Table 2: Correlation between different measures of subjective outcome and measures based on the Chinese Positive Youth Development Scale (CPYDS)

Measures	Time 2 CPYDS	Difference Score
CSOS-Total	.68*	.30*
CSOS-Process	.62*	.27*
CSOS-Program	.64*	.29*
Perceived Effectiveness	.62*	.29*

Note. CSOS-Total = Total score based on the 20 items of the Chinese Subjective Outcome Scale. CSOS-Process = Total score based on Item 1 to Item 6. CSOS-Program = Total score based on Item 7 to Item 20. Perceived Effectiveness = Total score based on Item 16 to Item 20. Time 2 CPYDS = CPYDS score at posttest. Difference score = Posttest CPYDS score minus pretest CPYDS score.

A two-tailed multistage Bonferroni procedure was used to obtain the data related to all 8 correlations (Larzelere & Mulaik, 1977).  $p_{FW}$  is based on the familywise Type 1 error rate.  $p_T$  is the Type 1 error rate per test.

\*  $p_{FW} < .01$ ;  $p_T < .003$



Table 3: Prediction of changes in objective outcome at posttest by subjective outcomes

Dependent Variable	Step 1			Step 2					
	Predictor	Beta	R <sup>2</sup>	Predictor	Beta	Predictor	Beta	F Change	△R <sup>2</sup>
Time 2 CPYDS	Time 1 CPYDS	.61a	.38	Time 1 CPYDS	.39a	CSOS-Total	.51a	1563.66*	.21
Time 2 CPYDS	Time 1 CPYDS	.61a	.37	Time 1 CPYDS	.42a	CSOS-Process	.46a	1222.97*	.18
Time 2 CPYDS	Time 1 CPYDS	.61a	.37	Time 1 CPYDS	.42a	CSOS-Program	.47a	1283.75*	.18
Time 2 CPYDS	Time 1 CPYDS	.60a	.36	Time 1 CPYDS	.43a	Perceived Effectiveness	.46a	1246.86*	.18

Note. CSOS-Total = Total score based on the 20 items of the Chinese Subjective Outcome Scale. CSOS-Process = Total score based on Item 1 to Item 6. CSOS-Program = Total score based on Item 7 to Item 20. Perceived Effectiveness = Total score based on Item 16 to Item 20. Time 1 CPYDS = CPYDS score at pretest. Time 2 CPYDS = CPYDS score at posttest.

a A Bonferonni corrected alpha level (.05/12) of .004 was adopted for the evaluation of all 12 standardized regression coefficients.

\*  $p < .0001$