College Freshmen's Quality of Life and Its Perceived Determinants: A Case Study of a Chinese Island University

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The aims of the study were to investigate health-related quality of life (QoL) and its perceived determinants among college freshmen at an island Chinese University located between China and Taiwan. The framework of QoL given by the WHO was employed to evaluate the QoL of 404 college freshmen in January 2013, and a retrospective approach was adopted to solicit the participants' perceived determinants of their QoL. Each participant completed the WHOQOL-BREF questionnaire and specified reasons for their degree of satisfaction in each life facet addressed in the questionnaire. The participants expressed a moderate degree of satisfaction in all of the life facets measured ($M = 3.29$), with 3.4 in the physical, 3.3 in the psychological, 3.1 in the social, and 3.2 in the environmental domain on a 5-point scale. Among the 24 life facets assessed, sleep quality, transportation availability, medical service quality, concentration, and energy were the top five unsatisfactory facets. Determinants of the participants' QoL involved multiple factors such as the ease of day-to-day living, living environment, psychological factors, time arrangement, sleep quality, etc. The freshmen year is a transition period requiring great adjustment in lifestyle due to the change from secondary to tertiary education and from home stay with parents' care to independent dormitory life. The findings of the study indicated that college freshmen in the context of the university studied had not experienced expected satisfactory levels of life quality, and that the perceived determinants of their life quality could be further addressed for promotion of health and education quality. The study could serve as an example to call for regular examinations on students' experience and discrepancies between experience and expectation in order to address related issues for higher educational quality.

Keywords: Quality of life (QoL), college freshmen, WHOQOL-BREF, mixed methods

Introduction

Quality of Life (QoL) research has been a prominent interest not only in sociology but also in many other fields, such as psychology and management, and especially in medicine. As the concept of health evolved from merely absence of disease to "a state of physical, mental and social well-being" (WHO, 1998), QoL has become a main theme in medicine, or to some, a synonym with health promotion (Evans, 1994). As evident to educational professionals, the consensus of whole-person care in health promotion resembles that in learning or education, which also involves multifaceted dimensions of a student's whole being. Previous studies have investigated QoL with regard to learning/education (Audin, Davy, & Barkham, 2003; Pekmezovic et al., 2011; Roberts & Clifton, 1991; Skevington et al., 2010), and some studies have shown that QoL is associated with attrition rates and specialty choices (Goldin, 2007). The critical role of QoL in educational settings was also

shown in the study of 112,000 students at 1,098 colleges in North America on their satisfaction with their universities: QoL and learning quality were the main themes surveyed (Noel-Leitz, Inc., 2013).

Furthermore, the college attrition rate is normally highest in the first year when students transition into a new environment (Rausch & Hamilton, 2006), which inevitably results in considerable loss of government funding and individual investment. In a review of 60 studies of retention strategies, a "supporting" strategy, which included support for learners' health and well-being programs, was identified among the four main types of successful strategies (Beatty-Guenter, 1994). In another study of four colleges in England that had addressed retention and dropouts for years, Martinez also argued that student retention issues might form a new body literature on college improvement (Martinez, 1996).

As concluded by Pekmezovic et al. (2011), "a need of knowledge concerning different factors influencing student's HR QoL still exist"; thus, an understanding of college freshmen's QoL and its determinants was believed to be indispensable in improving their health and learning quality. Nevertheless, to the researcher's knowledge, amongst the great wealth of literature on QoL, no studies have specifically focused on college freshmen, especially regarding subjective QoL. Therefore, the present study explored the following questions:

- What is the QoL of the college freshmen in the study?
- What are the determinants of the QoL perceived by college freshmen in the study?

Method

Research Design

Moving beyond the existing literature on QoL, which was mostly quantitative in nature, this study adopted a mixed-methods design incorporating a questionnaire survey and a retrospective method to solicit the participants' reflections on factors influencing their satisfaction with their QoL. It is argued that "mixed methods have particular value when we want to examine an issue that is embedded in a complex educational or social context", and that "mixed methods research can achieve a fuller understanding of a target phenomenon and verify one set of findings against the other" (Dörnyei, 2007). Brown (2009) also noted that "by allowing respondents to answer questions in their own words, you can develop and deepen your understanding of the research issue, particular from the respondents' own emic perspectives".

Subjects

Subjects were 404 Chinese college freshmen (57% male and 43% female) enrolled in 10 classes in eight of the 13 Departments in the four colleges at National Quemoy University (NQU) in the 2012-2013 school year. They were freshman classes accessible to the researcher when the study was conducted and were composed of 62% of the Departments at NQU in that school year. NQU was established in 1997 on the island of Kinmen with a majority of students coming from Taiwan. The island lies two kilometers off the southwest coast of mainland China.

Instruments

The WHOQOL-BREF employed in the study was developed by the WHO for an authentic evaluation of the QoL of people around the world. It encompassed 26 questions in physical, psychological, social, and environmental domains (WHOQOL Group, 1998) (see Appendix). The WHO Quality of Life Development Team reported satisfactory reliability and validity of the scale (Skevington, 2004). The Cronbach's alpha value of this scale in the present sample was 0.86, indicating acceptable internal consistency.

Procedure

The following procedure was used from September 16, 2012 to January 25, 2013 for data collection. First, permission to employ the WHOQOL-BREF questionnaire was granted from the WHOQOL development division, and the translated Chinese edition was permitted for use from the Taiwan WHOQOL Group (Yao, 2002). Then, the WHOQOL-BREF was administered in January 2013 to all participants. The participants expressed their degree of satisfaction on a five-point scale in the first two questions on overall QoL and general health and in the 24 life facets assessed in the questionnaire, as well as the reasons for their degree of satisfaction. Later, permission for including the questionnaire in the report was further granted by the WHO.

Data Analysis

The data collected was first checked for invalid responses. The quantitative data were processed using Excel and SPSS programs, and the qualitative data were analyzed using the following procedure (Nunan, 1992): (1) jot down all ideas given in each of the 26 questionnaire items; (2) compare the similarities and differences among the ideas and categorize them into patterns; (3) tally the number of participants giving the same idea in each pattern; and (4) group the patterns into themes for each questionnaire item. In the 26 questions surveyed, 10,230 ideas were classified into different themes.

Results

Research Question One: What Was the QoL of the College Freshmen in the Study?

Table 1 presents the results of the participants' QoL. On a 5-point scale, the average points in the four domains measured were 3.36 (SD = 0.43) in the physical, 3.29 (SD = 0.56) in the psychological, 3.11 (SD = 0.68) in the social, and 3.2 (SD = 0.44) in the environmental. The mean of all items is 3.29 (SD = 0.88). The participants perceived a moderate degree of satisfaction with their QoL.

Table 1

Mean, SD and Percentage in Each Life Facet Assessed by the WHOQOL-BREF

Domain (M/SD)	Facet	Mean/SD	1+2	4+5
Overall	1. Overall quality of life	3.3/0.8	14%	39%
	2. General health	3.2/0.9	25%	41%
	3. Pain and discomfort	3.4/1.1	21%	47%
	4. Medication-dependent	3.8/0.9	6%	62%
Physical (3.36/0.43)	10. Energy and fatigue	3.0/0.9	27%	25%
	15. Mobility	3.9/1.0	7%	65%
	16. Sleep and rest	2.8/0.9	37%	20%
	17. Ability to perform daily activities	3.4/0.8	8%	44%
Psychological (3.29/0.56)	18. Work capacity	3.2/0.8	16%	30%
	5. Positive feelings (feel enjoying life)	3.4/0.7	5%	43%
	6. Spirituality (feel meaningful life)	3.3/0.8	13%	33%
	7. Concentration	3.0/0.8	28%	23%
Social relationships (3.11/0.68)	11. Body image and appearance	3.5/0.7	4%	44%
	19. Self-esteem	3.2/0.8	14%	31%
	26. Negative feelings	3.5/0.8	10%	59%
	20. Personal relationship	3.3/0.8	9%	36%
	21. Sexual activity	2.9/1.0	2%	2%
	22. Social support (friends' support)	3.6/0.7	4%	58%

(Table 1 continued)

Domain (M/SD)	Facet	Mean/SD	1+2	4+5
Environment (3.2/0.44)	8. Physical safety and security	3.3/0.7	10%	35%
	9. Environment (pollution, noise, traffic)	3.4/0.7	8%	41%
	12. Financial resources	3.4/0.9	15%	45%
	13. Information accessibility	3.1/1.0	26%	37%
	14. Leisure activities	3.5/0.8	8%	48%
	23. Home environment	3.3/0.9	16%	41%
	24. Health service accessibility	2.8/0.9	34%	21%
	25. Transport	3.0/1.1	35%	33%

Notes. "1+2" stands for "very dissatisfied or dissatisfied" and "4+5" for "satisfied or very satisfied". The omitted "3" stands for "neither satisfied nor dissatisfied".

Research Question Two: What Were the Determinants of the QoL Perceived by the College Freshmen in the Study?

The qualitative results in this section are presented in the sequence of the first two general items on overall QoL and overall health, and the four domains of life assessed in the WHOQOL-BREF questionnaire to further disclose the participants' rationales for their degree of satisfaction in each of the life facets assessed.

Overall quality of life. For the participants, the top determinant of their QoL was function of living, or the convenience of accessing daily necessities. More than one-quarter of the participants felt that the ease of obtaining what they needed in life, such as food, clothing, transportation, or recreation facilities, contributed to their QoL.

The second top determinant of the participants' QoL was the quality of the environment, which included their dormitory, campus, and the area where the university is located, including clean air and the weather. A quiet and clean room/dormitory for resting and studying, a beautiful campus landscape, and a peaceful living environment around the campus were perceived by another one-fifth of participants as a major determinant of their QoL.

The third determinant was psychological factors such as being worry-free, in a happy mood, or having self-confidence or a goal-driven life. The fourth major determinant was the daily timetable or time arrangement of a given day. Some participants felt that their good/poor time arrangement in a day resulted in their good/poor QoL. Another equally important determinant was sleep: whether they slept well at night decided some participants' life quality, and, for some participants, poor time arrangement was the cause of their poor sleep quality. Other participants perceived family support, roommate relationships, or friends as the major determinant of their life quality.

Overall health. For overall health, approximately half of the participants accredited their degree of satisfaction to their health conditions, including no disease (87 participants), rare illness (56), having good health (59), or no major disease (9). For participants (119) who indicated a certain disease they had, the following illnesses were mentioned: flu/cold, allergy, intestinal and stomach trouble, sports injuries, overweight, headache, or weak immunity. Other determinants of the participants' health included exercise, food, daily schedule, sleep, weather, young age, schoolwork, and psychological condition.

Physical domain. Seven life facets were assessed for the physical domain. The first facet, "sleep", was the facet participants were most dissatisfied with (see Table 1). Two-thirds of participants gave various reasons for not experiencing desired sleep quality, including staying up late, the noise made by schoolfellows in the

dormitory, different life schedules of roommates, insomnia, bedding, early morning classes, schoolwork load, irregular daily schedules, et cetera.

For the second facet, "energy", "sleep/rest" stood out among other factors. Many participants perceived good/sufficient sleep as the determinant of their energy. Other determinants included exercise, staying up late, regular daily routine, or food. Several participants credited their good/enough energy to their strong body, young age, or having no special energy-consuming activities in life. For the participants in the study, sleep, exercise, and staying up late were the top three determinants of energy.

For the "pain" facet, while some participants (24%) responded that pain did not interfere with their life because they had no pain at all or rarely had pain, others expressed that pain would keep them from concentrating or accomplishing duties, and would affect their mood and effectiveness for tasks. Pain named by the participants included headache, menstrual cramps, stomachache, leg pain, soreness, or sports injuries.

For the "work capacity" facet, the participants' satisfaction with their work capacity was affected by factors such as work performance, characteristics/attitudes, abilities, experiences, or goals.

For the "ability for daily activities" facet, most participants were satisfied with their ability to perform their daily living activities because they could handle them, accomplish them, or do the things they wanted to do. In addition, they were healthy young people, had energy and basic/good human abilities to take on tasks, do things efficiently, and could participate actively.

In the "mobility" facet, the participants expressed that they were able to get around because they were healthy young adults and free to do what they wished.

For the facet "medical dependence", more than half of the participants expressed that they did not depend on medical treatment to function in life because they were healthy or rarely ill. Another one-quarter stated that they went to clinics when they had minor diseases such as the flu/cold, stomachache, toothache, allergy, or a minor injury. A small portion of participants (10%) expressed that they did not depend on medical facilities because they normally recovered naturally, disliked seeing a doctor, or watched their health carefully.

Psychological domain. In this domain, six life facets were measured. For the first facet, "concentration", the top determinant was "nature-given", i.e., the participants believed they were born with good/poor concentration. Desiring to accomplish a task well/effectively or doing things they wanted/liked to do were another two determinants. For those who could not concentrate ideally, physical conditions, especially insufficient sleep, distractions (such as computer, busy life, or people around), and the environment, such as a quiet room or library, were the most influencing factors. Other contributors included mood, emotion, a calm character, training received in childhood, or exam pressure.

In the "self-esteem" facet, most participants' ascribed to the following determinants: self-acceptance, self-confidence, achievement, and life status, such as living a happy and healthy life or having good interpersonal relationships. To those who were not satisfied with themselves, lacking goals, laziness, unsatisfying performance, mediocre appearance, poor abilities or attitudes, and low self-confidence or interpersonal relationships were the affecting factors.

In the "meaningful life" facet, the top determinant was a goal-driven life. Other determinants of a meaningful life included schoolwork, learning, autonomy in life, leisure time, a full and active life, friends, families, a happy life, or new things in life. Learning (either related to the participants' major or for personal interest/growth) played an important role in this facet.

In the “negative feelings” facet, the major reasons for not having negative feelings included being optimistic, being able to adjust negative feelings and maintain a good mood, living happily every day, having a smooth life, having friends to talk to, or living with goals. For those who had negative feelings, the reasons were: (1) having a bee in their bonnet; (2) unsatisfactory academic achievement or pressure from schoolwork; (3) unsatisfactory personal relationships; (4) being pessimistic, sentimental, or anxious; (5) lacking clear goals; (6) feeling frustrated about one's self or life; (7) not sleeping well; (8) being away from home; (9) having low self-confidence; and (10) experiencing physical discomfort.

In the “enjoy life” facet, the following determinants were specified: (1) happiness or contentment with life; (2) sufficient recreation activities/facilities; (3) a smooth life; (4) a decision to enjoy life; (5) a learning situation or school workload; (6) a meaningful, goal-driven, active and full life; and (7) being worry free.

Last, in the “body image” facet, most participants were able to accept their appearance for the reasons that appearance was nature-given, or that they were self-confident or good-looking. Others expressed that they were unique, that the heart is more important than appearance, that they did not care too much, or that they had complete body parts.

Social domain. In this domain, for the facet “personal relationship”, most participants were satisfied mainly for three reasons. First, they were happy with having good friends, many friends, close friends, some friends, or having good interactions with everyone. Second, their schoolmates were easy to get along with, their friends would reach out to help when they were in need, or their friends were nice people. Third, it was easy for them to make friends.

For the second facet, “sex life”, around half of the participants did not respond to this question. The other half gave the following answers: currently no sex life, no need at this stage, no boy/girlfriend, no experience, or no comment. Only 3% of the responding participants clearly specified that they were satisfied with their sex life because they had a sex partner.

In the facet, “friend support”, one-quarter of participants expressed that they were satisfied with the support received from friends because their friends supported them when they were in need or at all times, or gave them assistance/suggestions. Others said that their friends encouraged them, motivated them to move forward, were very nice to them, treated them with sincerity, cared about them, comforted them, accompanied them, trusted them, understood them, tolerated them, or gave them confidence. Those who were not satisfied expressed that they did not need support, had no friends, or had bad friends.

Environmental domain. Eight life facets were measured in this domain. In the first facet, “transport”, participants (56%) expressed that they had no motorcycles, thus, they rode a bicycle, walked, or took a bus to get around; they also stated that the bus service was not convenient at all. On the other hand, more than one-third of the participants were satisfied with the transport because they had a scooter and, on the small island (140 square kilometers), a scooter could easily take them wherever they wanted to go.

In the second facet, “health care accessibility and quality”, more than one-third of the participants complained about the distance of the only hospital on the island from the campus and the quality of its medical service, whereas another one-third appreciated the numerous clinics around with no charge for registration and medical treatment.

For the “information accessibility” facet, the majority of the participants were satisfied with the convenience and availability of Internet services. A small portion of the participants, nevertheless, wished that the Internet speed could be faster, and wireless service could be available in more places. Other participants

wished that information sources from television, newspapers, or magazines in school dormitories, libraries, or stores could be richer and more available.

In the facet "conditions of accommodation", around half of the participants noted the aspects they liked such as convenience, very reasonable rent, fully equipped, neatness, comfortableness, safety, or good environment. Another one-quarter of the participants simply expressed that they thought the accommodation was acceptable, nice, very good, or was their best choice. The remaining participants, however, listed the things they disliked, such as poor sound proofing, slow Internet speed, sanitary problems, inconvenience of shopping for food, maintenance issues, management improvement, or building design defects.

For the "finance" facet, the major determinants were family support, reasonable expenditure for daily needs, and good financial management. Most participants received enough money from their parents. Only a small portion of the participants expressed that they lacked money or that they needed to work part-time.

For the "security" facet, the determinants included: the low community crime rates, support of friends and family, the safe environment on campus, around campus, and outside the campus, living in the school dormitory, a threat-free living circle, a worry-free life, being familiar with the environment, trust in people, personality, and not lacking any daily necessities.

As for the "healthy physical environment" facet, the main determinants included clean air, clean environment in dormitories, on the campus, and the community outside the campus, green trees and pastures, and little pollution.

Lastly, for the "leisure activities" facet, the top determinants were time and the environment such as the facilities and equipment. Many participants said that they did leisure activities when they had time. Around one-third of the participants named the activities they did in their free time. The top leisure activity was exercise, including sports, walking, hiking, or sightseeing. Other activities were using the computer, participating in student clubs, reading, or joining school or community activities with friends. Having scooters or not was another factor determining the opportunities for leisure activities. The other determinants included the participants' personalities, habits, or school workload.

Discussion

Adopting the WHO's definition of QoL, the study investigated college freshmen's QoL and its determinants. The participants showed a moderate degree of satisfaction with their QoL (3.36 in the physical, 3.29 in the psychological, 3.11 in the social, and 3.20 in the environmental domains). When the four domain scores were converted to a 4–20 or 0–100-point scale (WHO, 1998) for comparisons, the participants' degree of satisfaction was lower than those of groups reported elsewhere (Skevington et al., 2010). For example, on a 4–20-point scale, the participants' scores in the four domains were 13.4, 13.2, 12.3 and 13.1, while, in Skevington et al. (2010), the scores were 15.5, 13.8, 13.2, and 11.1 with a group from the USA, 16.8, 15.7, 14.4, and 13.0 with a German group, and 16.0, 14.2, 12.8, and 12.4 with a Japanese group. Moreover, when compared with an Iranian group aged 18–20 who scored 73.1, 65.2, 65.2, and 58.7 in the four domains (Nedjat, 2011), the participants showed a lower degree of satisfaction, with their scores of 59.0, 57.4, 51.9, and 56.9, respectively. However, it was noted that cross-national comparisons should be made with great caution due to cultural differences or research samples (Theuns, 2010). When the results of the study were compared with those of Taiwanese groups, such as with 311 school nurses in Taipei City (66.6, 58.1, 62.3, and 60.5) or 7,000 members of the general Taiwanese population (3.8, 3.5, 3.6, and 3.4), the participants also scored slightly lower (Huang,

2005; Lee, 2010). This information shed some light on the need to enhance the QoL among the participants.

In research question one, the areas needing improvement were also identified. The facets that the participants expressed higher percentages of dissatisfaction with included sleep, transportation, health service accessibility, concentration, energy, information, etc. The facet "sleep", which more than one-third (37%) of the participants expressed as being "dissatisfied" or "very dissatisfied" with, calls for immediate attention from the university studied, especially because this facet also influenced other facets such as "energy" and "concentration", which were also among the top five dissatisfied facets, as without concentration, learning cannot occur effectively (Rudasill, Gallagher, & White, 2010).

The qualitative data in research question two further supplemented and elaborated these quantitative findings. For instance, the top determinants specified for unsatisfactory sleep were staying up late, noise made by schoolfellows and different life schedules of roommates. Because the majority of the participants lived in a school dormitory, the finding that staying up late was specified by many participants as a determinant of their sleep quality and energy highlights a call for improving dorm management as well as education in the participants' time management and ethics.

The qualitative data of the study also demonstrated that the determinants of QoL perceived by the participants varied greatly. This result coincided with the numerous definitions and scales on QoL in the literature due to different aspects people valued in their life (Hass, 1999). Among the participants, even with the same rationale/determinant expressed, the degree of satisfaction perceived could be different. Two participants might write, "because I lack nothing", for instance, but one felt that his or her QoL was acceptable (choice 3), while the other was very satisfied with his or her life (choice 5). This justified the framework of QoL adopted by the WHO, which assessed the subjective perceptions of an individual's diverse aspects of life.

On the other hand, providing college students with opportunities to learn positive thinking towards different living conditions could be one way to increase their life satisfaction. For example, it is beneficial for those students who complained about the boring life on the small island to know how most other students took advantage of the natural environment in their leisure time and to learn about recreational activities available on the island. Having positive thoughts is an indispensable element affecting an individual's attitude toward themselves and their environment, as well as their achievement and satisfaction with their life. Napoli and Wortman (1998) reported that psychosocial measures, such as social support, self-esteem, social competence, and psychological well-being, have both direct and indirect effects on college retention. With positive thinking, individuals could enhance their self-esteem, confidence, personal relationships, performance, and life quality. Therefore, promoting a counseling/education service on positive thinking could be vital to students' current life satisfaction and success in the future.

As individualized instruction is an indicator of high-quality education, addressing individuals' different needs in college is a goal of universities. Take the qualitative results shown in "the overall health" facet as an example; although most students were in their young and healthy stage of life, one-fourth of participants specified the discomforts they sometimes suffer, such as headache, sports injury, flu/cold, stomach trouble, allergy, or being overweight. It would be beneficial to students if universities offered practical programs for general health promotion and disease prevention to every student.

Finally, the results of the study revealed that the top facets in the participants' life needing improvement include sleep quality, energy, concentration, medication services, transportation, and information availability. Even though some of the facets are out of the university's power to change, the university should still seek

support from the government to make improvements. For the areas that are within the university's authority, budget changes or plans should be made for better conditions. For example, the university might consider adopting a non-subject program that encompasses courses like time management, interpersonal relationships, financial management, Internet usage for daily information, general health care, leisure activities, positive thinking, or life development to assist freshmen in laying a foundation for higher QoL both in college and after graduation (Brinkworth, McCann, Matthews, & Nordstrom, 2009).

Caution should be exercised in generalizing the findings of the present study, as QoL is culturally and contextually related. Limitations also include the framework of the WHO QOL questionnaire employed in the study. The validity of the findings would have been increased if a revised questionnaire for college freshmen had been available. Future research on college freshmen's QoL could be conducted with a more representative sample and include inter-judge reliability information. Research on determinants of college freshmen's QoL could also adopt an in-depth interview and statistical analysis of the determinants that are important in this stage of life. With all the limitations of the study, the information revealed could serve as a case reference to draw attention to promoting college freshmen's QoL.

Ethical approval: "All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki Declaration and its later amendments or comparable ethical standards".

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Appendix

WHOQOL-BREF Questionnaire Items

1. How would you rate your quality of life?
2. How satisfied are you with your health?
3. To what extent do you feel that physical pain prevents you from doing what you need to do?
4. How much do you need any medical treatment to function in your daily life?
5. How much do you enjoy life?
6. To what extent do you feel your life to be meaningful?
7. How well are you able to concentrate?
8. How safe do you feel in your daily life?
9. How healthy is your physical environment?
10. Do you have enough energy for everyday life?
11. Are you able to accept your bodily appearance?
12. Have you enough money to meet your needs?
13. How available to you is the information that you need in your day-to-day life?
14. To what extent do you have the opportunity for leisure activities?
15. How well are you able to get around?
16. How satisfied are you with your sleep?
17. How satisfied are you with your ability to perform your daily living activities?
18. How satisfied are you with your capacity for work?
19. How satisfied are you with yourself?
20. How satisfied are you with your personal relationships?

21. How satisfied are you with your sex life?
22. How satisfied are you with the support you get from your friends?
23. How satisfied are you with the conditions of your living place?
24. How satisfied are you with your access to health services?
25. How satisfied are you with your transportation?
26. How often do you have negative feelings such as blue mood, despair, anxiety, or depression?