

DESIGN AND VALIDATION OF A HEALTH INSTRUMENT IN A DENOMINATIONAL UNIVERSITY

DISEÑO Y VALIDACIÓN DE UN INSTRUMENTO DE ESTILO DE VIDA SALUDABLE EN UNA UNIVERSIDAD CONFESIONAL

Francisco Nilson Gonçalves Balbé - balbe@ifto.edu.br

Master in Collective Health at the Federal Institute of Tocantins (IFTO), Palmas, Tocantins, Brazil.

Omar Arodi Flores Laguna - oflores@um.edu.mx

Doctor in Educational Management at the University of Montemorelos (UM), Montemorelos, Nuevo León, Mexico.

José Leonardo Jiménez-Ortiz - jimenezortiz@um.edu.mx

Doctor en Educación en la Universidad de Montemorelos (UM), Montemorelos, Nuevo León, México.

Abstract: Introduction: Maintaining a healthy lifestyle through the regular practice of positive habits has a direct impact on health. **Objective:** To design and validate the 8 Natural Remedies for a Healthy Lifestyle Scale in 411 students of a Mexican denominational university. **Methods:** The final 28-item scale grouped the dimensions: clean air and sunlight, abstinence, rest, exercise, adequate diet, inadequate diet, water, and trust in God's power. To explore the underlying structure of the scale, an exploratory factor analysis was carried out using the principal axis extraction method with a promax oblique rotation. **Results:** The instrument meets the established validity standards, as evidenced by the values of the Kaiser-Meyer-Olkin adequacy coefficient and Bartlett's tests of sphericity. In addition, the scale managed to explain 54.4% of the common variance, which supports its validity. As for reliability, it was calculated using the Omega coefficient, and in all dimensions, the coefficients obtained exceeded the minimum threshold of 0.70, indicating good internal consistency of the instrument. **Conclusion:** The scale has satisfactory psychometric properties and a factorial structure that allows inquiring about the practice of eight natural remedies to maintain a healthy lifestyle in the population studied.

Keywords: Healthy Lifestyle; Students; Validation Study.

INTRODUCCION

The World Health Organization (WHO) defines as a healthy lifestyle "a way of life that reduces the risk of becoming seriously ill or dying prematurely"¹. Given the growing global burden of the disease caused by lifestyle-related diseases, public health authorities worldwide emphasize the importance of maintaining a healthy lifestyle as an approach in the prevention of Non-Communicable Diseases (NCDs), including type 2 diabetes, hypertension, cancer and cardiovascular diseases, which claim the lives of more than 41 million people annually². Seventh-day Adventists (ASD) constitute a conservative religious group that encourages its members to adopt healthier lifestyle practices to improve health and to refrain from any practice harmful to their bodies³, thereby reducing the common risk factors of NCDs declared by the WHO, such as tobacco consumption and exposure, an unhealthy diet, physical inactivity and alcohol consumption⁴. One of the founders of the ASD Church wrote extensively about the benefits of implementing the eight natural remedies (pure air, sunlight, abstinence, rest, exercise, proper nutrition, water use and trust in divine power) as the practice of a healthy lifestyle for a longer life, disease prevention and health recovery⁵. Studies carried out in the ASD population that practice these natural remedies as part of their lifestyle, show the longevity of these, a lower risk of lifestyle-related diseases and a better quality of life related to their health⁶⁻¹². Despite the fact that the more than 21.9 million members of the ASD Church worldwide¹³ share a common religious belief that emphasizes healthy lifestyle practices, limited studies have been carried out in Latin America that investigate these practices. In addition, as far as is known, in Mexico there is no instrument capable of exploring the practice of the eight natural remedies. Therefore, the objective of this study was to design and determine the validity of construct, as well as the reliability of Scale 8 Natural Remedies for a Healthy Lifestyle in students of a Mexican Adventist university.

METHODS

Design

An exploratory factor analysis of the 8 Natural Remedies for a Healthy Lifestyle Scale (8RNEVS) was carried out in a group of students from an Adventist university in northern Mexico. The realization of this study consisted of two phases: the design and validation of the content of Scale 8 Natural Remedies for a Healthy Lifestyle (8RNEVS), as well as the exploratory factor analysis of it. In the first phase, an integrative review of the literature on healthy lifestyle practices and ASD population was carried out in the online databases MEDLINE (Medical Literature Analysis and Retrieval System Online) and SciELO (Scientific Electronic Library Online). With the material obtained, the first version of the 8RNEVS Scale was elaborated following the guidelines established for that purpose^{14,15} and to estimate the validity of its content the

method based on the judgment of experts¹⁶ was used. In the second phase of the study, the 8RNEVS Scale was applied to the target group consisting of university students and then carried out an Exploratory Factor Analysis (AFE).

Population and sample

For the validation of the content of the 8RNEVS Scale by the experts, six health professionals (two doctors, two nutritionists, a nutritionist and a clinical chemist biologist) were invited with a professional certificate to practice in Mexico, with 10 or more years of clinical experience in the practice of lifestyle medicine or participation in activities to promote healthy lifestyles in the university population, who evaluated the items of the Scale in terms of their representativeness and relevance through a Likert-type scale and subsequently issued judgments on the content and degree of correspondence between the elements¹⁶. For the application of the 8RNEVS Scale with the target population, 411 students from a Mexican Adventist university representing 25.43% of the university's population were included under non-random sampling for convenience, of which 226 (54.99%) were men and 185 (45.01%) women, whose inclusion criteria were to be enrolled in one of the eight faculties at the undergraduate level during the 2022-2023 school year, adults, who agreed to participate voluntarily by granting their consent and answering individually the instrument used. The exclusion criteria were those students who did not attend the semester on a regular basis at the time of the application of the instrument. The sample size and the ratio was equal to 12.45, following the recommendation of at least 10 people per item¹⁷.

Instrument

The initial version of the 8RNEVS Scale included 33 items, grouped into the following dimensions: Clean Air (AP1-AP3), Sunlight (LS1-LS3), Abstinence (AB1-AB3), Rest (DE1-DE4), Exercise (EJ1-EJ3), Food Regime (RA1-RA9), Water (AG1-AG3) and Confidence in the Power of God (CPD1-CPD4). For the responses of the instrument, a five-point Likert-type scale was used, where never (1), almost never (2), sometimes (3), almost always (4), Always (5), which indicates the frequency with which the eight natural remedies are practiced.

Analysis of the data

The statistical analyses were carried out with the SPSS program (version 27) and with JASP (version 0.17.3.0), considering the value of $p < .05$ statistically significant. To identify if there was a normal distribution, the asymmetry and kurtosis of each of the items of the Scale was analyzed, taking as a reference an interval from -1 to 118.19. Because the univariate distribution of the items was not normal, the method of ordinary least squares was used, specifically that of extraction

by main axes¹⁵. The rotation criterion that was used in the Exploratory Factor Analysis (AFE), was the oblique method, specifically the promax rotation. For the adequacy of the sample, the Kaiser-Meyer-Olkin index (KMO) was used, which must be greater than .80 to consider it acceptable²⁰. To verify if there were sufficient correlations to apply the AFE, the Bartlett Sphericity Test was used, which must be significant ($p < .05$)²¹. To find out if one variable correlated with the others, the communalities were calculated. These were considered acceptable as they were over .30²². The AFE looked for factors that explained most of the common variance, this is the part of the variation of the variable that is shared with other variables²⁰. For the interpretation of the factors, the factor loads that represented the correlation between each variable and the factor were used. Significant factor loads were considered when they were greater than .30²². For the reliability of the dimensions of the instrument, McDonald's Omega coefficient was used, which reflects the level of reliability and does not depend on the number of elements²³.

Ethical considerations

The study was carried out in accordance with the Helsinki declaration and the General Health Law in force on health research in Mexico, so it was evaluated and endorsed by the Institutional Research Committee, registered with the Federal Commission for Protection against Health Risks, granting for its execution the reference number 2023-038-CI220.

RESULTS

Descriptive statistics

In Table 1, it can be seen that the items that presented the highest arithmetic averages were those related to abstinence from alcoholic beverages and smoking. On the other hand, the lowest arithmetic averages were observed in the items "Sleep at least 7 to 9 hours per night" and "Respect a regular schedule to sleep daily 10:00 PM or earlier." In relation to the values of asymmetry and kurtosis, it has been noted that the items "Refrain from consuming alcoholic beverages", "Abstain from smoking" and "Trusting God's guidance to solve stressful events in daily life" are outside the established range that ranges from -1 to 1. These results suggest a marked deviation from the normal distribution of these items. Therefore, the decision was made to use the methods of ordinary least squares, specifically the main axes technique, to address this particularity in data analysis.

Table 1 - Descriptive statistics of the 8 Natural Remedies for a Healthy Lifestyle Scale (8RNEVS).

Items	Media	Deviation standard	Asymmetry	Kurtosis
1. Breathe deeply outdoors when you need to control tension and anxiety (AP2).	3.80	0.95	-0.43	-0.39
2. Spend time outdoors in nature (AP3).	3.64	0.95	-0.13	-0.68
3. Expose yourself to the sun for 5 to 10 minutes a day, at least three times a week (LS1).	3.91	1.02	-0.61	-0.47
4. Expose yourself to sunlight to receive health benefits (LS3).	3.79	0.99	-0.47	-0.43
5. Refrain from consuming alcoholic beverages (AB2).	4.59	0.97	-2.48	5.76
6. Refrain from smoking (AB3).	4.69	0.86	-2.95	8.79
7. Sleep at least 7 to 9 hours per night (DE1)	3.15	1.06	0.14	-0.53
8. Respect a regular sleep schedule daily (10:00 PM or before) (DE2).	2.90	1.16	0.19	-0.72
9. Feeling rested when you wake up (DE3).	3.16	0.94	0.07	-0.30
10. Perform vigorous physical activities (at least 3 days a week and 20 minutes per session), which make you breathe much harder than normal (EJ1).	3.41	1.15	-0.14	-0.86
11. Perform moderate physical activities (at least 5 days a week and 30 minutes per session) that make you breathe a little harder than normal (EJ2).	3.31	1.16	-0.07	-0.92
12. Perform light physical activities such as walks (at least 5 days a week and 30 minutes per session) (EJ3).	3.67	1.11	-0.41	-0.79
13. Eat breakfast daily before 8 AM (RA1).	3.38	1.31	-0.28	-1.09
14. Eat 2 to 3 times a day at the same time (RA2).	3.80	1.10	-0.67	-0.27
15. Eat 6 to 11 servings daily (1 serving = ½ cup) of carbohydrates (bread, tortilla, rice, oatmeal, pasta, noodles, amaranth, among others) (RA3).	3.53	1.01	-0.34	-0.24
16. Eat 2 to 3 servings of quality protein daily (1 serving = 90 grams) of animal origin (meat, poultry, fish, eggs, among others) or of plant origin (1 serving = ½ cup) (beans, chickpeas, lentils, soybeans, walnuts, almonds, peanuts, among others) (RA4).	3.40	1.08	-0.25	-0.55
17. Consume 2 to 3 servings a day of low-fat dairy products (milk, yogurt, etc.) (RA5).	3.16	1.10	-0.02	-0.63
18. Eat 2 to 5 servings of fruit a day (RA6).	3.32	1.09	-0.15	-0.72
19. Eat 2 to 5 servings of vegetables a day (RA7).	3.53	1.03	-0.26	-0.49
20. Reduce consumption of drinks and foods with excess sugar (RA8).	3.52	0.99	-0.33	-0.30
21. Reduce the consumption of foods with excess sodium (RA9).	3.52	0.96	-0.17	-0.46
22. Make natural water the drink of choice when you are thirsty (AG1).	4.20	0.95	-1.15	0.76
23. Drink enough water to feel hydrated (4 to 6 250 ml glasses of water per day) (AG2).	4.08	0.95	-0.88	0.27
24. Use water as a home treatment to improve blood circulation, calm nerves, etc. (AG3).	4.00	1.01	-0.82	-0.05
25. Trust in God's guidance to resolve stressful events in daily life (CPD1).	4.30	0.94	-1.43	1.74
26. Seek spiritual support to face problems in personal, family or work life (CPD2).	4.09	1.01	-0.97	0.19
27. Practice a daily devotional (prayer, Bible reading, etc...) (CPD3).	3.64	1.17	-0.50	-0.62
28. Participate regularly in religious services (CPD4).	3.93	1.16	-0.90	-0.04

Exploratory factorial analysis (AFE). Through the AFE, the underlying structure of the 333

variables that make up this instrument was investigated. Based on the criteria of normality of asymmetry and kurtosis (Table 1), the AFE was carried out using the main axis method with a promax rotation. Two tests were carried out to determine if the AFE was appropriate. First, the KMO sample adequacy test, which yielded a value of .828, which indicates that the data were suitable for factor analysis. Secondly, Bartlett's sphericity test ($X^2 = 4788,943$, $gl = 137$, $p < .001$) that showed significant results, validating the suitability of the correlation matrix for the AFE. During this process, a decision was made regarding the inclusion of the items in the Scale. Five items were excluded from the analysis because they presented communities and low factor loads, which indicated their minimal contribution to the underlying structure of the factors and their lack of statistical relevance. In addition, the communalities for the remaining items of the Scale were recalculated. The results confirmed that these items exceeded the established extraction criterion ($Com = .300$), which supported their inclusion in the analysis. These items proved to have a significant amount of variance shared with the extracted factors, consolidating their relevance in the measurement of the construct of interest. In terms of the common variance explained, the eight factors identified in the AFE together explained 54.4% of the common variance. After making the corresponding adjustments, the 8RNEVS Scale has been structured into 28 items distributed in eight factors (Table 2).

Table 2 - Exploratory factor analysis of the 8 Natural Remedies for a Healthy Lifestyle Scale (8RNEVS).

Ítems	Omega coefficient (Ω)								Communality
	.805	.818	.832	.798	.723	.772	.895	.803	
RA3	.825								.588
RA4	.719								.488
RA7	.542								.410
RA6	.530								.414
RA2	.519								.378
RA1	.505								.364
RA5	.483								.366
CPD2		.849							.655
CPD1		.743							.590
CPD3		.668							.504
CPD4		.657							.499
EJ2			.936						.850
EJ1			.874						.723
EJ3			.444						.384
DE1				.885					.707
DE2				.806					.675
DE3				.519					.337
LS3					.787				.610
LS1					.732				.480
AP3					.475				.379
AP2					.415				.324
AG2						.921			.753
AG3						.609			.464

AG1						.608			.469
AB3							.931		.864
AB2							.795		.653
RA9								.838	.554
RA8								.632	.530
VE	23.8%	7.7%	5.8%	4.3%	4.0%	3.3%	3.0%	2.5%	

VE= Variance explained

RA= Diet; CPD= Trust in the Power of God; EJ= Exercise;

DE=Rest; LS= Solar Light; AP= Pure Air; AG= Water; AB=Abstinence.

When performing the AFE, the first factor grouped seven items and has been called the "Adequate Diet" (RAA). The indicators that make it up are the following: RA1, RA2, RA3, RA4, RA5, RA6 and RA7. The second factor identified consists of four items and has been called "Trust in Divine Power" (CPD). The items that were grouped in this factor are: CPD1, CPD2, CPD AND CPD 4. The third factor identified, made up of three items, has been called "Exercise" (EJ). The items that were grouped under this category are: EJ1, EJ2 and EJ3. The fourth factor, which consists of three items, has been called "Rest" (DE). The items that were grouped under this category are: D1, D2 and D3. The fifth factor, composed of four items that originally belonged to two different factors, has been designated "Solar Light and Pure Air" (LS/AP). The items that were grouped under this name are: LS1, LS3, AP2 and AP3. The sixth factor, composed of three items, has been called "Water" (AG). The items that were grouped under this factor are: AG1, AG2 and AG3. In the seventh factor, two items were grouped, although ideally it is recommended to have at least three items per factor, the decision was made to keep them because they have a high correlation ($r = .754$). This factor has been assigned the name "Abstinence" (AB). The items that were grouped in this factor are: AB2 and AB3. In the eighth factor, a situation similar to the one mentioned above was found, where it is ideally recommended to have at least three items per factor. However, in this case, the decision was made to keep the two items because they have an acceptable correlation ($r = .677$). This factor has been assigned the name "Inappropriate Food Diet" (RAI). The items that were grouped in this factor are: RA8 and RA9. As a result, the final instrument was made up of a total of 28 items (Table 3).

Table 3 - Dimensions and items of the 8 Natural Remedies for a Healthy Lifestyle Scale (8RNEVS).

Dimensions and items

Pure Air and Sunlight

1. Breathe deeply outdoors when you need to control tension and anxiety.
2. Spend time outdoors in nature.
3. Expose yourself to the sun for 5 to 10 minutes a day, at least three times a week.
4. Expose yourself to sunlight to receive the health benefits. Abstinence

Abstinence

5. Refrain from consuming alcoholic beverages.
6. Refrain from smoking.

Rest

7. Sleep at least 7 to 9 hours a night.
8. Respect a regular sleep schedule daily (10:00 PM or earlier).
9. Feeling rested when you wake up.

Exercise

10. Perform vigorous physical activities (at least 3 days a week and 20 minutes per session), which make you breathe much harder than normal.
11. Perform moderate physical activities (at least 5 days a week and 30 minutes per session) that make you breathe a little harder than normal.
12. Do light physical activities such as walks (at least 5 days a week and 30 minutes per session).

Adequate Diet

13. Eat breakfast daily before 8:00 AM.
14. Eat 2 to 3 times a day at the same time.
15. Eat 6 to 11 servings daily (1 serving = ½ cup) of carbohydrates (bread, tortilla, rice, oatmeal, pasta, noodles, amaranth, among others).
16. Eat 2 to 3 servings of quality protein daily (1 serving = 90 grams) of animal origin (meat, poultry, fish, eggs, among others) or of plant origin (1 serving = ½ cup) (beans, chickpeas, lentils, soybeans, walnuts, almonds, peanuts, among others).
17. Consume 2 to 3 servings a day of low-fat dairy products (milk, yogurt, etc.).
18. Eat 2 to 5 servings of fruit a day.
19. Eat 2 to 5 servings of vegetables a day.

Inadequate Diet

20. Reduce consumption of drinks and foods with excess sugar.
21. Reduce consumption of foods with excess sodium.

Water

22. Make natural water the drink of choice when you are thirsty.
23. Drink enough water to feel hydrated (4 to 6 250 ml glasses of water per day).
24. Use water as a home treatment to improve blood circulation, calm nerves, etc.

Trust in the Power of God

25. Trust in God's guidance to resolve stressful events in daily life.
 26. Seek spiritual support to face problems in your personal, family or work life.
 27. Practice a daily devotional (prayer, Bible reading, etc...).
 28. Participate regularly in religious services.
-

The reliability of the instrument was evaluated using McDonald's Omega coefficient, whose values are within the established range of 0.7 to 0.9. This indicates that the instrument used in the study is highly reliable, which means that the measurements made with this scale are consistent and valid.

DISCUSSION

In this study, an exploratory factor analysis of the 8 Natural Remedies for a Healthy Lifestyle Scale was carried out in university students from a Mexican Adventist institution. The results show that the psychometric properties of the scale are adequate for the validity of the construct, since it measures the practice of the eight natural remedies to maintain a healthy lifestyle in the population studied. In addition, the items were grouped into the eight factors initially proposed. However, the factors Sunlight and Clean Air were grouped into one, and the Food Regime factor was divided into two, Adequate Food Regime and Inadequate Food Regimen. On the other hand, the

reliability of the instrument is acceptable, since each factor has a reliability between .7 and .9. In a similar study carried out in the United States in 2004²⁴, the practice of the eight natural remedies in ASD teaching staff was investigated with the NEW START Questionnaire. In the present study, the objective was to design and determine the construct validity of the 8RNEVS Scale. In addition, the NEW START Questionnaire is not a scale and does not measure a single concept, since it proposes to measure different items and does not present the psychometric properties of validity and reliability, unlike the 8RNEVS Scale. In another similar study, on the practice of the eight natural remedies carried out in Brazil in 2018²⁵, to make the content validity of the Q8RN Questionnaire, 20 experts participated and a Cronbach alpha of .88 was obtained, while the reliability for the 25 items that make up the instrument was .92. In this study, the content validation of the 8RNEVS Scale was carried out with six experts. Unlike the Q8RN, the reliability of the 8RNEVS Scale was calculated with McDonald's omega coefficient, finding an average reliability for all factors of .806. Finally, there is a similarity between the number of dimensions of the NEW START Questionnaire, the Q8RN Questionnaire and the 8RNEVS Scale, because all three were structured based on the health principles promoted by the ASD3.5 Church. However, the results obtained in this study must be considered under their limitations, one of these being that the selection of the sample was non-random for convenience, and only one of the four ASD universities in Mexico was considered. In addition, the characteristics of the site where the investigation was carried out are very specific. Therefore, the results cannot be generalized to the entire ASD university population in Mexico.

CONCLUSION

The Exploratory Factor Analysis (AFE) showed that the 8RNEVS Scale has satisfactory psychometric properties and a factorial structure with eight factors (RAA, CPD, EJ, DE, LS/AP, AG, AB and RAI) that allows to investigate the practice of the eight natural remedies for a healthy lifestyle in students of a Seventh-day Adventist university in Mexico. Therefore, in the future, a Confirmatory Factor Analysis (AFC) is expected to be carried out.

REFERENCES

1. World Health Organization. Healthy living: what is a healthy lifestyle? [Internet]. Copenhagen: WHO Regional Office for Europe; 1999 [citado Julio 11 de 2023]. Disponible en: <https://iris.who.int/handle/10665/108180>
2. World Health Organization. WHO package of essential noncommunicable (PEN) disease interventions for primary health care [Internet]. Geneva: WHO; 2020 [citado Enero 23 de 2023]. Disponible en: <https://www.who.int/publications/i/item/9789240009226>

3. Seventh-Day Adventist Church. Living a Healthfull Life [Internet]. Silver Spring: General Conference of Seventh-Day Adventist Church; 2023. [citado Marzo 14 de 2023]. Disponible en: <https://www.adventist.org/health/#:~:text=Adventists%20believe%20the%20key%20to,—promote%20clean%2C%20healthy%20lives>
4. Organización Panamericana de la Salud. Factores de riesgo de las enfermedades no transmisibles en la Región de las Américas: Consideraciones para fortalecer la capacidad regulatoria. Documento técnico de referencia REGULA [Internet]. Washington DC: PAHO; 2016 [citado Septiembre 15 de 2023]. Disponible en: <https://iris.paho.org/handle/10665.2/28227?locale-attribute=es>
5. White EG. The ministry of healing. Altamont, TN: Harvestine; 1905.
6. Connerton CS, Theuri S. NEWSTART: An 8-Week Faith-Based Health Promotion Program to Reduce Chronic Disease Risk Factors in the US. *J Relig Health*. 2023;62(5): 3175-3187.
7. Gashugi L, Oh J, Mashchak A, Fraser G. Lifestyle-Related Behavior and Self-Reported Health Status Among Seventh-Day Adventists. *American Journal of Lifestyle Medicine*. 2023: 1-13.
8. Miles FL, Orlich MJ, Mashchak A, Chandler PD, Lampe JW, Duerksen-Hughes P, Fraser GE. The biology of veganism: plasma metabolomics analysis reveals distinct profiles of vegans and non-vegetarians in the Adventist Health Study-2 cohort. *Nutrients*. 2022; 14.709: 1-22.
9. Hu FB. Diet strategies for promoting healthy aging and longevity: An epidemiological perspective. *Journal of Internal Medicine*. 2024; 295. 508–531
10. Craig BA, Morton DP, Kent LM, Gane AB, Butler TL, Rankin PM, Price KR. Religious Affiliation Influences on the Health Status and Behaviours of Students Attending Seventh-Day Adventist Schools in Australia. *J Relig Health*. 2018;57(3):994-1009.
11. Sanchez A, S. Christine Chung, Mejia A, Ramirez FE, Shavlik GW, Bivens RL, Brown-Fraser S, Gallant RD. Multiple lifestyle interventions reverses hypertension. *Cogent Medicine*. 2019;6(1):1636534.
12. Majda A, Bodys-Cupak I, Kamińska A, Suder M, Gródek-Szostak Z. Religiously conditioned health behaviors within selected religious traditions. *International Journal of Environmental Research and Public Health*. 2022;19(1) 454:1-15.
13. Adventist News Network. The Seventh-day Adventist Church: 160 years later [Internet]. Silver Spring: General Conference of Seventh-Day Adventist Church; 2023 [citado Septiembre 28 de 2023]. Disponible en: <https://adventist.news/news/the-seventh-day-adventist-church-160-years-later>
14. Jebb AT, Ng V, Tay L. A Review of Key Likert Scale Development Advances: 1995-2019. *Front Psychol*. 2021;12:637547.
15. Guion RM. Content validity-The source of my discontent. *Appl Psychol Meas*. 1977;1(1): 1-10.
16. Abad FJ, Olea J, Ponsoda V, García C. Medición en ciencias del comportamiento y de la salud. Madrid: Editorial Síntesis; 2011.
17. Everitt BS. Multivariate analysis: the need for data, and other problems. *Br J Psychiatry*. 1975;126:237-40.

18. Ferrando PJ, Anguiano-Carrasco C. El análisis factorial como técnica de investigación en psicología. *Papeles del Psicólogo*. 2010;31(1):18-33.
19. Muthen B, Kaplan D. A comparison of some methodologies for the factor analysis of non-normal Likert variables: A note on the size of the model. *Br J Math Stat Psychol*. 1992;45(1):19-30.
20. Lloret-Segura S, Ferreres-Traver A, Hernández-Baeza A, Tomás-Marco I. El Análisis Factorial Exploratorio de los Ítems: una guía práctica, revisada y actualizada. *Anal Psicol*. 2014;30(3):1151-1169.
21. Tabachnick BG, Fidell LS. *Using Multivariate Statistics*. 5th ed. Boston: Allyn and Bacon; 2007.
22. Hair JF Jr, Black WC, Babin BJ, Anderson RE. *Multivariate data analysis*. 7th ed. Upper Saddle River: Prentice Hall; 2010.
23. McDonald RP. *Test theory: A unified treatment*. Mahwah: Lawrence Erlbaum Associates, Inc; 1999.
24. Ashley OG. *Faculty stress and health practices: Stress among higher education Seventh-day Adventist faculty who practice NEWSTART health principles*. [Dissertation]. Minneapolis (MI): Walden University; 2004
25. Abdala GA, Meira MDD, Isayama RN, Wataya RS, Rodrigo GT, Ninahuaman MFL, Oliveira SLS da S, Santos SO. Construction and Validation of the Eight Natural Remedies Questionnaire: Adventist Lifestyle. *Int J Dev Res*. 2018;8(5):20300-20310.