RESEARCH ARTICLE

Wellness integrative profile 10 (WIP10) — an integrative educational tool of nutrition, fitness and health

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Abstract

Objective: To assess the educational impact and satisfaction of using Wellness Integrative Profile 10 both by specialists and clients in nutrition, health and fitness centres.

Methods: This cross-sectional study was conducted at 42 wellness centres in Romania during March-November 2016, where Wellness Integrative Profile 10 was implemented with no less than 3 months before the beginning of the study. Data was gathered through a 15-item questionnaire related to the educational impact of integrating 10 parameters regarding the level of health, nutrition and fitness of the subjects.

Results: The questionnaire had a reliability Cronbach score of 0.777 for specialists and 0.705 for clients.

The number of subjects who rated the satisfaction questionnaire WIP10 with maximum grade (5) were: 181.93(61.88%) specialists and 1,309.40(65.88%) clients.

Conclusions: The implementation of Wellness Integrative Profile 10 will allow in the future to design customised and specialised programmes for health.

Keywords: Physical wellness, Fitness, Health, Nutrition. (JPMA 68: 882; 2018)

Introduction

The latest scientific results and specific products for nutrition and physical education show that the identification of variables like beliefs and behaviours, also the sensitivity to cultural values and habits of the population, can be used to design an efficient community education intervention.[1]

In order to optimise the activity and services at the wellness centres it is required to implement modern technologies for data collection concerning the level of health, nutrition, fitness and lifestyle characteristics in order to develop customised profiles and programmes.

In this regard we have created Wellness Integrative Profile 10 (WIP10) which we consider to be a practical and educational tool focussing on the physical part of wellness. The physical wellness stands for the interconnection between health, nutrition and physical activity, and it also targets the ways in which vital signs of the body are corroborated with exercise practice and completed by a tailored programme of nutrition.

An efficient wellness programme is the result of interdisciplinary approaches based on collaboration, experience and knowledge of specialists in nutrition, physical education, kinesiotherapy and medicine fields.

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Wellness requires implementation of adequate lifestyle habits for improving health and quality of life, and achieving total wellbeing. Wellness incorporates factors such as adequate fitness, proper nutrition, stress management, disease prevention, spirituality beliefs, no smoking or alcohol abuse, personal safety, regular physical examination, health education and environmental support.[2-4] Modifiable lifestyle behaviours targeted in health promotion programmes should be prioritised in an evidence-based manner.

Health is static and is measured at a specific point in time. On the contrary, wellness is dynamic and consists of an individual's health in relationship with his habits and practices over time.[5] A number of recent studies have demonstrated the influence of fitness on wellness, health, quality of life and longevity,[6-14] both on healthy or ill people, along with nutrition habits.[15-18]

Despite the increasing use of apps for monitoring lifestyle changes, recent studies suggest their efficacy remains unclear, particularly because of different lifestyle behaviours for both children and adults.[18-21] The evaluation of wellness centres' websites reveals an increased frequency in the use of wellness profiles especially in America; in Europe their number was much lower and in Romania there wasn't any.

The purpose of developing WIP10 was to gather the integrated information about the dynamics of physical health, nutritional status and fitness levels followed by the provision of useful corroborated tasks that will

educate the clients and specialists in order to achieve an accurate analysis of the specific wellness issues.

The current study was planned to assess the educational impact and satisfaction of using WIP10, both by specialists and clients from Romania wellness centres.

Subjects and Methods

This cross-sectional study was conducted at 42 wellness centres across Romania from March to November 2016, where WIP10 was implemented with no less than 3 months before the beginning of the study.

The centres were located in 39 of the 42 counties of Romania. All specialists employed in these centres were invited to participate. The clients were recruited by the specialists. The use of WP10 was implemented in April-October 2016, and the questionnaire was completed in September-November 2016.

All the participants in this study were volunteers, and prior to their inclusion they expressed their consent for participation.

Our target population was active adults aged 18-65 years who practised physical activity in wellness centres located in urban areas of Romania. According to the National Institute of Statistics, the total number of inhabitants in urban areas within 18-65 years were about 8.5 million inhabitants,[22] of which about 72.1% are adequately physically active.[23] The representative sample with a 95% confidence interval (CI) and a 2.5% margin of error was 1,537 subjects. For the selection of the wellness centre the main inclusion criteria was the existence of at least 3 different specialisations among the employees: medicine, nutrition, physiotherapy, or sport. Wellness centres were included only after receiving manager's approval for the implementation of WP10 instrument among specialists and clients.

The criteria for clients' inclusion were the existence of a subscription for a period of at least 3 months in one of the wellness centres concerned; filling in WIP10 and the implementation of personalised recommendations.

People aged less than 18 or over 65 years, individuals who did not have regular physical activities and those who had subscriptions for less than 3 months, clients who did not implement or offer feedback on WIP 10, and clients who worked independently without specialist counselling were excluded.

The hypothesis of the study was that WIP10 is an educational, practical and effective tool for assessing the physical wellness as an integrative part of the following components of our body: health, nutrition and fitness, from the perspective of specialists and clients involved in wellness activities. Providing this information in real time and also prospectively, it is expected to allow an objective personal profile evaluation and can optimise proactive healthy behaviours (Table-1).

This assessment included a questionnaire-based survey on the degree of satisfaction and the educational, practical and innovative impact of WIP10 implementation in order to optimise the specific activities in wellness centres. The questionnaire included 15 items with Likert' type of responses (1 minimum to 5 maximum). Questionnaires were created with 'Google Form' directly targeting the clients and specialists of wellness centres (Table-2).

SPPS 21 was used to analyse the data. To assess the reliability or the internal consistency of the questionnaire the statistic index Cronbach's alpha was calculated. For comparisons between specialist and client cohorts, Mann-Whitney test was used, using the following formula: r=z/sqrt(n), where z was provided by the statistical software, and n was the sample size. The effect size (r) was calculated only for those differences which were statistically significant. For each item, data was tabulated as mean rank and median. The percentages of individuals that offered maximum grade (5) were tabulated. Separately, on the cohorts of specialists and clients, the patterns of opinions regarding the use and applicability of WIP 10 were investigated.

The Cronbach's alpha coefficient for 15 items was 0.777 for specialists, and 0.705 for clients, suggesting that the items had high internal consistency.

Results

Of the 2281 subjects, 1,987(87%) were clients and 294(13%) were specialists.

Among the specialists, 177(60.54%) were men, while among the clients, 820(41.82%) were men. Specialists with personal trainings background were 126(42.8%), nutrition 42(14.2%), physiotherapy 94(31.9%), and medical doctors 32(10.8%).

Clients provided significantly better scores than specialists ($p<0.05$), but for general data, daily water needs, heart rate zones and customised training plan, specialists provided significantly better scores than clients ($p<0.05$) (Table-2).

For specialists, Principal Component Analysis (PCA) was conducted on 15 items with orthogonal rotation (varimax). The Keiser-Meyer-Olkin (KMO) measure verified

Table-1: Description of the Integrative Wellness Profiles 10 Program (WIP10) content.

Parameters	Content	Information
1. General Information	*Personal data: name, age, gender, occupation, lifestyle, *health problems, accidents	Typology based lifestyles.
	*Cholesterol values	Cholesterol and BP values by age (A).
	*Blood pressure (BP) values	
	*Personal wellness goals. Sport practice and duration	Examples of personal wellness goals.
2.Metabolic, Information	*Type of preferred physical activity	General characteristics and nutrient percentages depending on metabolic typology.
	*Metabolic typology: A, B, C.	
3. Body Composition	*Metabolic age. Diet based on metabolic typology	Ideal weight (IW) (formula Lorintz) [H (cm), A (age in years)]: IW male = [H - 100 - (H-150) / 4] + ((A-20) / 4);
	*Real weight (M/F) (kg);	IW Female = [H 100 - (H-150) / 2.5] + ((A-20) / 6);
	*Height (H) (cm);	Body mass: BLM men (kg) = (W x 0.32810) + (H x 0.33929) - 29.5336 BLM female (kg) = (G x 0.29569) + (H x 0.41813) - 43.2933 [W (kg); H (cm)].
	*Ideal weight (IW) (M/F) (kg);	Skeletal muscle mass: 37% male, 28% female.
	*Weight (W)	Formula and rules: BMI = W / H^2.
	*Muscle mass (%/kg);	Waist-hip ratio norms by gender, age groups
	*Bone mass (%/kg);	
	*Body fat (%); body mass index (BMI);	
	*Waist Report - Balance	
4. Daily water needs	Body lean mass (BLM)	Mass of water in the body: women 45-60%; men 50-65%.
	*Hydric needs according to the length of effort and ambient temperature	Recommendations: 15-20 minutes prior to exercise: 200-400 ml; during exercise with breaks of 15-20 min: 180-350 ml; ? after exercise lasting 60 minutes.
		Liquid electrolyte: 400-800 ml.
5. User Lists		RMB Female = 65+ (9,5xW) + (1.8xH) - (4,7-A)
	Rate of basal metabolism (RMB) female/male*	RMB male = 66+ (13,7xW) + (5xH) - (6,8-A)
	RMB depending on lifestyle*	RMB depending on lifestyle.
		Recommendations: loss / weight gain 1 kg/0.5 kg / week subtract / add the required depending on lifestyle 1000/500 calories / day.
6. Level of fitness		Description, rules and qualifications and motor function tests by age and gender.
	Tests: * functional capacity; *cardio-respiratory capacity; fitness*	
7.Heart rate Zone	Maximum rate of heart rate (HR) by age *	Korvenen formula: (220) - (age) = HRM; (HRM) - (RHR) = HRR; RHR x (60% to 80%) = training range; % + (RHR) = target training zone.
	Target zone training at 50% -80% (HR values)	Table heart target zones: % HR, duration and the types of training, primary energy system, benefits advice.
	Heart rate maximal (RHM)	Scales HR (bpm) depending on age category.
	Resting heart rate (RHR)	
8. Caloric needs based on physical activity	Heart rate reserve (HRR)	Recommendation. Evaluation is based on: the type of exercise, exercise duration, age and gender.
	Caloric needs depending on the type of physical activity 1*	
	Caloric needs depending on the type of	
9. Types of somatic and nutrition recommend.	physical activity 2*	Characteristics of somatic typologies.
	* Somatic typology: ectomorph, mesomorph, endomorph.	
		Diets based on somatic typology.
10. Customized training plan	*Somatic typology and diet.	Volume, intensity, effort typology; Rate effort - pause.
	Physical training plan customized for a month.	Recommendations:
		- ectomorph: volume: large muscle groups: 20-30/training; small muscle groups: 8-12 rep / training, medium or large weights / 3-4 sets / 90-120 sec. break between sets / high intensity / frequency of 2 times/week / muscle group. Weekly Workout: 4:00. Cardio: 2 times/week / 20 to 30 min. low intensity.
		- mesomorph: volume: large muscle groups: 30-60/training; small muscle groups: 20-30 /training, small or medium weights / 3-4 sets / sec 60-90. break between sets / medium intensity / frequency: 2 times / week / muscle group. Weekly training: 5-6 hours. Cardio: 2 times/week / 30-60 min. training ranges.
		- Endomorph: volume: large muscle groups: 30-60/training; small muscle groups: small and medium weights rep/ training./ 20-30 / 2 sets / sec 30-60. break between sets / low intensity / frequency: 3 times/week, each muscle group. Weekly training: 7-8 hours. Cardio: 3-4 times/week/60 min. and workout intervals.

* Required to be filled out by clients.

Table-2: Relevance, number and percentage of maximal response (5) and effect size for each group of items for specialists and client group.

Items	Specialists			Clients			p	r (size effect)
	MR	Me	N/%(5)	MR	Me	N/%(5)		
Item 1. How innovative is WIP10?	1165.74	4	133/45.2	1137.34	4	833/41.9	.451	-
Item 2. How do you assess the utility of WIP10 software?	836.73	4	113/38.4	1186.02	5	1331/67.0	.000	0.21
Item 3. How do you assess the parameters complexity in WIP10?	959.33	4	127/43.2	1167.88	5	1177/59.2	.000	0.12
Item 4. How do you assess the relevance of adjacent information included in WIP10?	1099.14	5	170/57.8	1147.19	5	1235/62.2	.174	-
Item 5. Would you recommend WIP10 to your friends or colleagues?	958.87	5	194/66.0	1167.95	5	1686/84.9	.000	0.16
Item 6. How do you rate the educational relevance of parameter 1 General personal data?	1251.79	4	138/46.9	1124.61	4	764/38.4	.001	0.07
Item 7. How do you rate the educational relevance of parameter 2 Metabolic information?	1054.04	5	172/58.5	1153.87	5	1351/68.0	.003	0.06
Item 8. How do you rate the educational relevance of parameter 3 Body composition?	912.13	4	130/44.2	1174.86	5	1350/67.9	.000	0.16
Item 9. How do you rate the educational relevance of parameter 4 Daily hydric needs?	1224.43	5	236/80.3	1128.66	5	1396/70.3	.003	0.06
Item 10. How do you rate the educational relevance of parameter 5 Daily caloric needs?	1163.27	5	217/73.8	1137.70	5	1412/71.1	.430	-
Item 11. How do you rate the educational relevance of parameter 6 Fitness level?	1138.18	5	210/71.4	1141.42	5	1424/71.7	.920	-
Item 12. How do you rate the educational relevance of parameter 7 Heart zone target ?	1239.36	5	243/82.7	1126.45	5	1440/72.5	.000	0.08
Item 13. How do you rate the educational relevance of parameter 8 Caloric needs depending on the physical activity?	1029.23	5	170/57.8	1157.54	5	1365/68.7	.000	0.08
Item 14. How do you rate the educational relevance of parameter 9 Somatic typology and nutritional recommendations?	1182.67	5	220/74.8	1134.83	5	1407/70.8	.139	-
Item 15. How do you rate the educational relevance of parameter 10 Customized training plan?	1271.70	5	256/87.1	1121.66	5	1470/74.0	.000	0.10

MR - medium rank; Me- median, N/%(5) - number and procentage of maximal respons (5).

Table-3: Relevance items for the 4 patterns identified groups of specialists and clients.

Groups	Specialists				Clients			
Items Patterns	F1	F2	F3	F4	F1	F2	F3	F4
Item 1	0.203	0.724	0.056	0.155	0.057	0.571	0.172	-0.130
Item 2	-0.184	0.233	-0.092	0.206	0.065	0.588	0.019	-0.011
Item 3	-0.036	-0.058	0.107	0.078	0.007	0.646	-0.058	0.085
Item 4	0.208	-0.118	0.114	-0.081	0.009	0.625	-0.101	0.186
Item 5	0.159	0.496	-0.168	-0.080	0.033	0.732	0.075	0.000
Item 6	0.202	-0.087	0.751	0.180	0.460	0.008	0.160	-0.125
Item 7	0.108	0.103	0.075	0.823	0.104	-0.002	0.055	0.665
Item 8	0.050	-0.070	0.044	0.706	0.232	0.064	0.017	0.606
Item 9	0.441	0.415	0.456	0.390	0.598	0.007	0.220	0.179
Item 10	0.753	0.210	0.248	0.244	0.598	0.086	0.198	0.139
Item 11	0.059	0.800	0.263	-0.011	-0.014	0.041	0.291	0.692
Item 12	0.274	0.506	0.628	0.201	0.303	0.064	0.783	0.199
Item 13	0.508	0.164	-0.046	0.591	0.794	0.046	-0.101	0.201
Item 14	0.894	0.072	0.110	0.026	0.764	0.056	0.054	0.099
Item 15	0.036	0.187	0.776	-0.128	0.164	0.013	0.866	0.143
Eigenvalues	2.09	2.04	1.98	1,91	2.334	2.040	1.627	1.523
Explained Variance%	14.0%	13.6%	13.2%	12.7%	15.5%	13.6%	10.8%	10.1%

Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization. Specialists' rotation converged in 24 iterations; Clients rotation converged in 5 iterations.
The primary factor loadings greater 0.40 are in bold font.

the sampling adequacy for analysis (KMO=0.73), which are above Keiser's criteria (>0.5). Bartlett's test of sphericity (p<0.001) indicated that correlation between items were sufficiently large for PCA. An initial analysis was used to obtain eigenvalues for each component in the data. Six components had eigenvalues over Keiser's criterion of 1 and in combination explained 70.7% of the variance. After inspecting the screen plot we decided to keep four components which in combination would explain 53.6% of the variance.

For the clients, the KMO measure verified the sampling adequacy for analysis (KMO=0.74), which was above Keiser's criteria (>0.5). Bartlett's test of sphericity

($p<0.001$) indicated that correlation between items was sufficiently large for PCA. An initial analysis was run to obtain eigenvalues for each component in the data. Four components had eigenvalues over Keiser's criterion of 1 and in combination explained 50.2% of the variance. It was decided to keep all the four components.

The mean number of subjects who rated the satisfaction questionnaire WIP10 with maximum grade (5) was 181.93(61.88%) specialists and 1,309.40(65.88%) clients.

For specialists, the analysis revealed four patterns. The first pattern which accounted for 14% of variance included the questions related to the importance of: caloric needs on different levels of activity, nutritional recommendation for different somatic types, hydric and caloric necessities. The second component included evaluation on information provided regarding level of fitness, heart target zone, hydric necessary and the novelty and recommendation of WIP 10. The third component included the high relevance of personal information, personalized training plan, hydric recommendations and heart target zone. The fourth component included appreciations on information upon metabolism, body composition and fitness level. It accounted for 12.7% of the variance of the whole group.

For the clients, the analysis revealed four patterns as well. The first pattern which accounted for 15.5% reassembles the pattern obtained in the specialist cohort. It included the relevance of caloric needs on different levels of activity, nutritional recommendation for different somatic types, hydric and caloric necessities and additional information related to personal information. The second pattern included high ratings on novelty, utility, recommendation and additional information utility. The third pattern gathered appreciation for, personalised training plan and heart target zone. The forth component included appreciations on metabolism, body composition and caloric needs. It accounted for 10.2% of the variance of the whole group. In the case of specialists, as well as for the clients, patterns did not include significant negative eigenvalues (Table-3).

Discussion

WIP10 was designed as a practical and educational tool for clients of wellness centres in Romania that integrates three components of physical wellness — nutrition, fitness and health.

For characteristics like utility, complexity parameters, recommendation, adjacent information metabolic information, body composition, and caloric needs according to exercise level, clients had a significantly higher percentage than specialists. While for general data, daily hydric needs, heart rate zones, and customised training plan, specialists had significantly higher values than clients, meaning a better level of physical training and education.[3,18]

Our study highlighted the importance and necessity of using specialised software for data processing of clients in wellness centres based on which specialised wellness profiles can be designed in order to optimise the nutritional, physical and health levels of the clients.[2,12,15]

In 1986, MicroFit and the Stanford University School of Medicine devised a software called The Wellness Profile which focuses on the areas of exercise, nutrition, alcohol drinking, safety, tobacco use, and stress.[24,25] Most of the software and wellness profiles are focused mainly on the health component.

WIP10 distinguishes itself from these profiles through an integrated approach of the 10 components of nutrition, fitness and health and by providing additional information in order to form the proactive wellness behaviours.

The current study outlined the need to implement specialised software in wellness units. This programme will increase the level of clients' training at wellness centres and it can be standardised and implemented in the Romanian universities as practice for students of specialisations like Nutrition and Dietetics, Physical education, Kinesiology, and even Medicine.

Conclusions

The repeated use of WIP10 over time will provide data for future improvement of client health status, will highlight the validity and reliability of the overall design, and it will be a basic and accessible tool for the good practice in sport and healthcare areas.

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Conflict of Interest: None.

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