

EVIDENCE BASED PRACTICE IN NUTRITION AND CRITICAL THINKING

**An Introduction Lecture for Dietetics Students
At the Study Program of Dietetics
Department of Community Nutrition, FEMA IPB University
Thursday, 14 August 2024**



EVIDENCE BASED PRACTICE IN NUTRITION AND CRITICAL THINKING

Outline:

1. **Evidence Based Practice in Nutrition**
2. **Critical Thinking & Social-Emotional Skills**
3. **Professionalism & None plagiarism**
4. **Conclusions**



1.

Evidence Based Practice in -Nutrition

- EBP = “The process of asking questions, systematically finding research evidence, and assessing its validity, applicability and importance to food and nutrition practice decisions” in light of the client’s or patient’s values (The Academy of Nutr & Dietetics, 2017)
- Nutritionist/Dietitian, should apply EBP in supporting professional decision making (Diekman CB, 2007)
- It is one of core competencies of dietitians (RDs): Bridging the gap between research and practice, improving quality of care and performance of health professionals services (Laramee SH, 2005) => EBP guidelines (Papoutsakis C et al, 2017)



Nutrition Care Process (NCP)
Model by Academy of
Nutrition and Dietetics, USA
(Kent PS et al 2014)

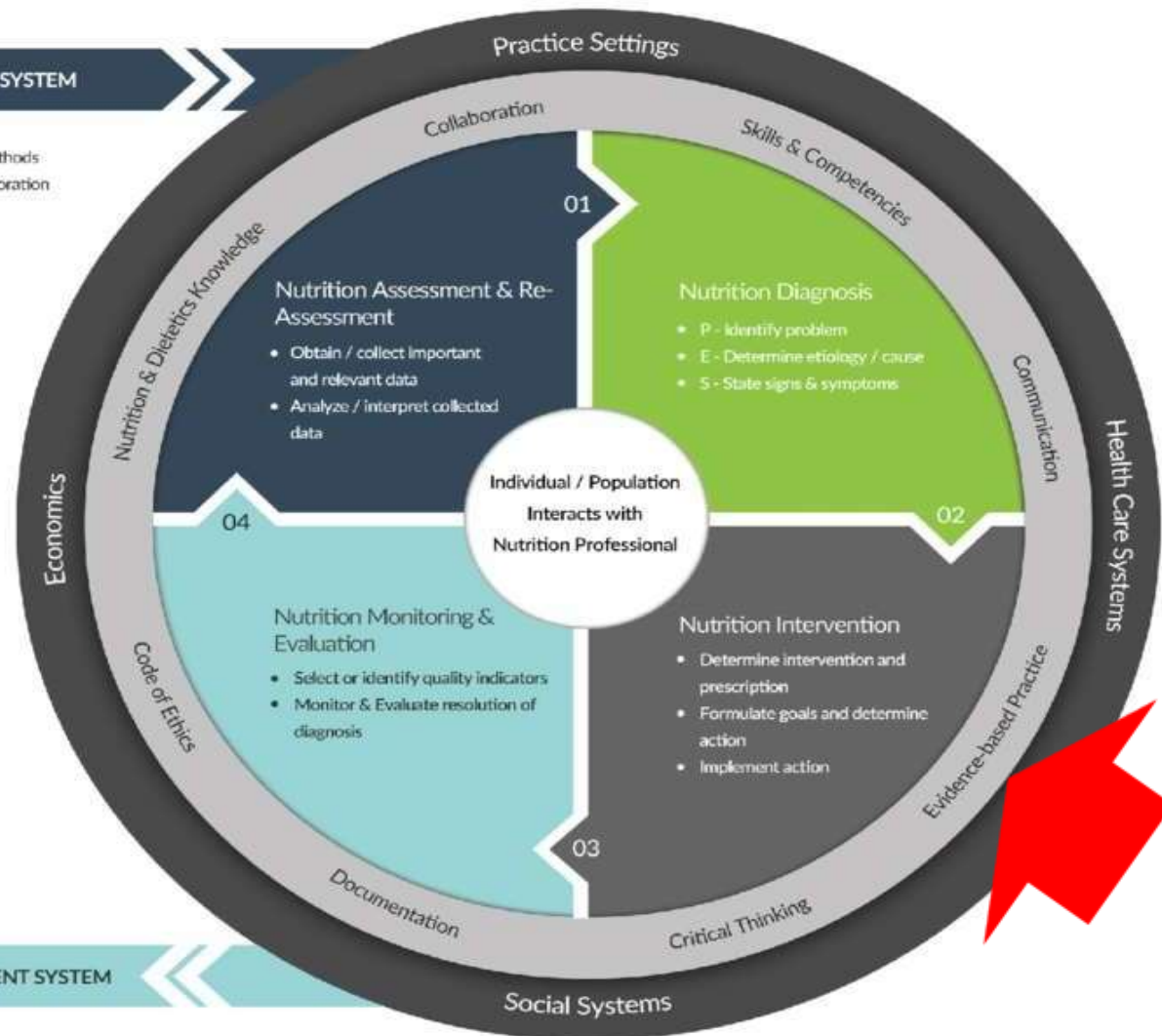
1. Nutrition & dietetics knowledge
2. Skills & competencies
3. Communication
4. Evidence based Practice (EBP)
5. Critical thinking
6. Collaboration
7. Documentation
8. Code of ethics

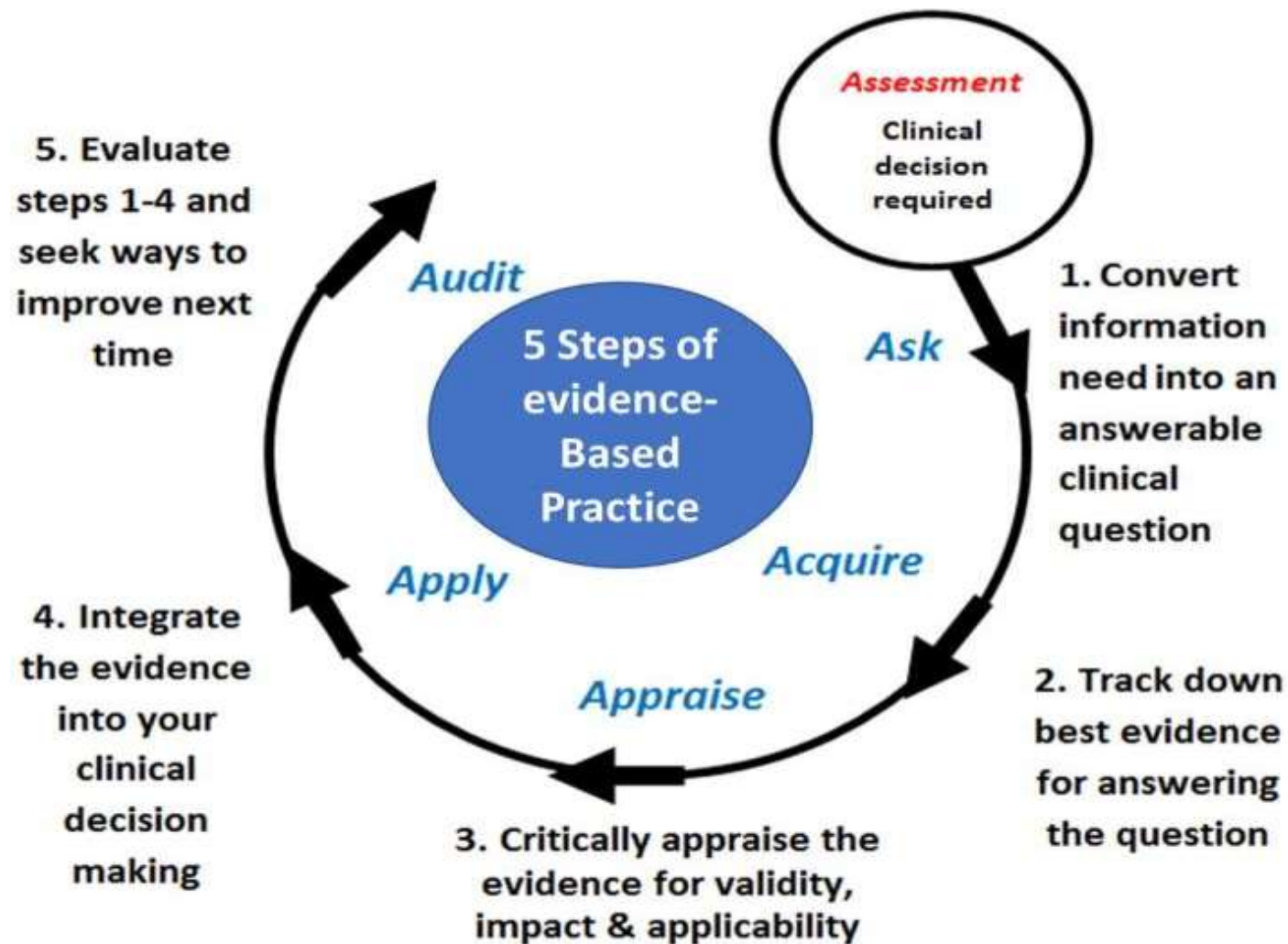
SCREENING & REFERRAL SYSTEM

- Identify risk factors
- Use appropriate tools and methods
- Involve interdisciplinary collaboration

OUTCOMES MANAGEMENT SYSTEM

- Research NCP
- Use aggregated data to conduct research
- Conduct continuous quality improvement
- Calculate and report quality indicators





Adapted from Sackett et al 2011, Evidence-based medicine: how to practice and teach EBM



Whether the end user is a medical director making a decision about implementing a guideline on a clinicwide basis or an individual physician making a treatment decision for an individual patient, an understanding of the strength of the evidence supporting the conclusions is essential.

PRACTICE GUIDELINES

A Practical Approach to Evidence Grading

NANCY GREER, PhD
GORDON MOSSER, MD
GEORGE LOGAN, MD
GWEN WAGSTROM HALAAS, MD, MBA

Greer N et al. 2000. Joint Commission on Accreditation of Healthcare Organizations. Journal on Quality Improvement, 26 (12):700-712

Grade I: The conclusion is supported by good evidence.

Grade II: The conclusion is supported by fair evidence.

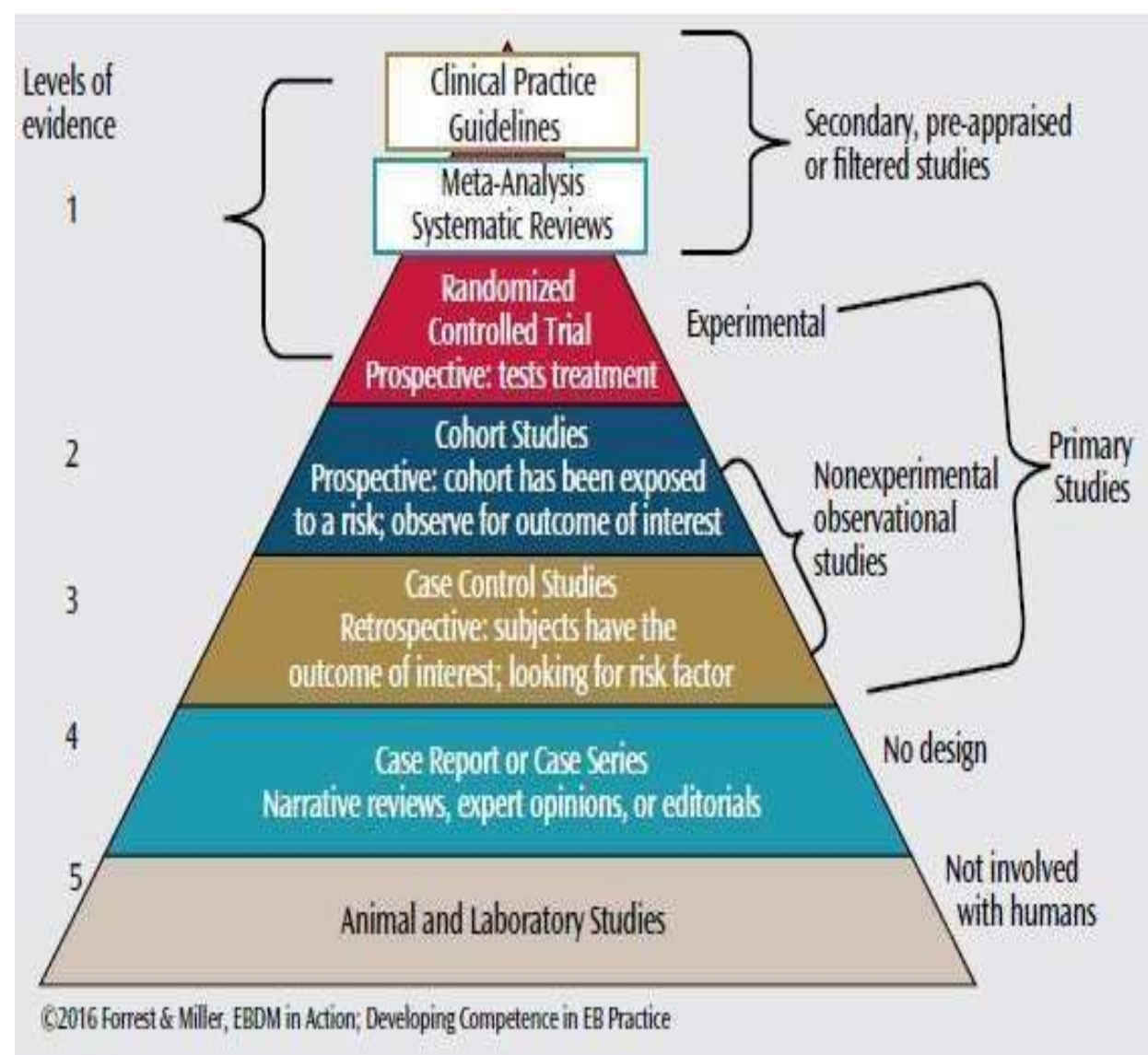
Grade III: The conclusion is supported by limited evidence.

Grade IV: The conclusion is supported only by opinion.



Based on ability to control for bias and to demonstrate cause and effect in humans

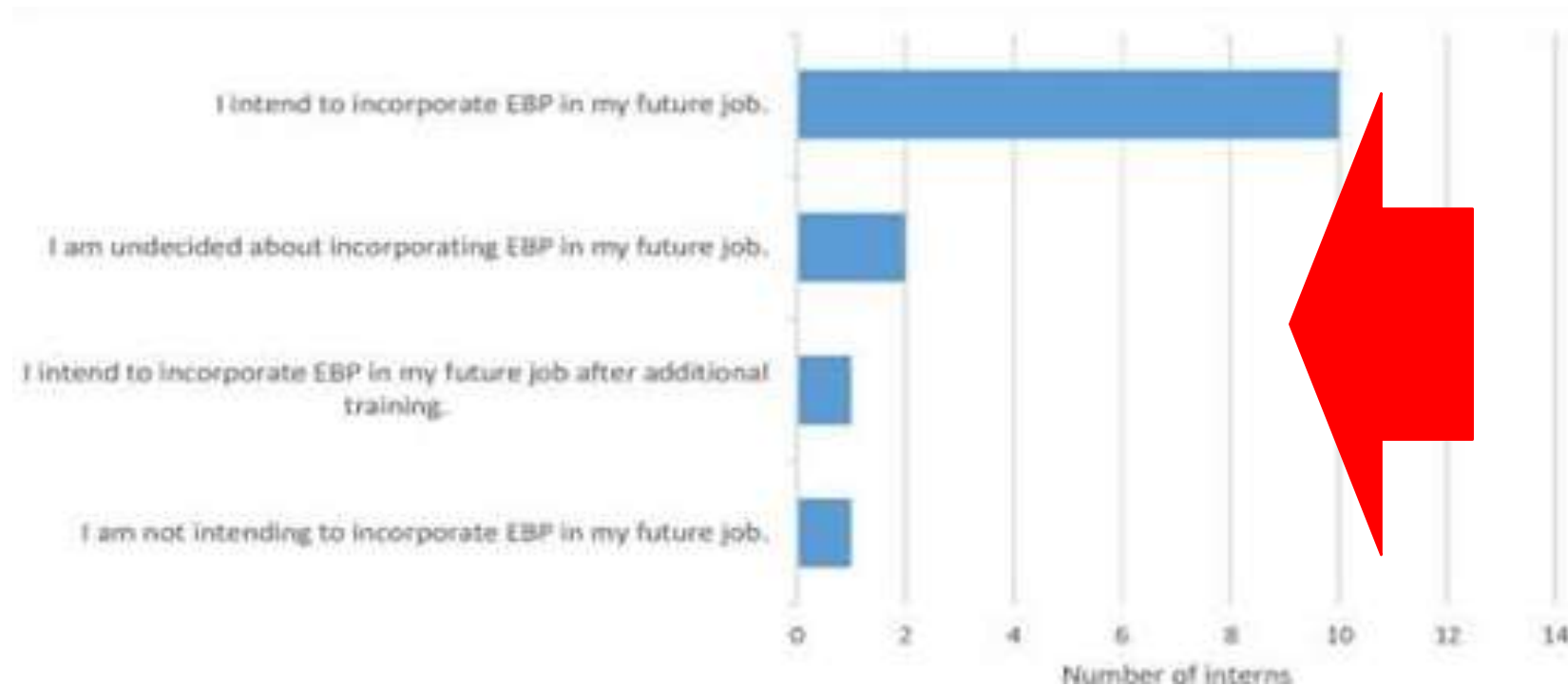
Level	Example of Evidence
Level 1	Meta-analysis of Homogenous RCTs Randomized Control Trial
Level 2	Meta-analysis of Level 2 or Heterogenous Level 1 Evidence Prospective Comparative Study
Level 3	Review of Level 3 Evidence Case-control Study Retrospective Cohort Study
Level 4	Uncontrolled Cohort Studies Case Series
Level 5	Expert Opinion Case Report Personal Observation
Foundational Evidence	Animal Research <i>In Vitro</i> Research Ideas, Speculation



Dietetic interns' perceptions and use of evidence-based practice: an exploratory study

Rachel J. Hinrichs, MS, MSLS, AHIP

Journal of the Medical Library Association 106 (1) January 2018



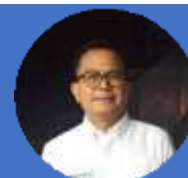
Clinical practice behavior item and total scores (mean \pm standard deviation) of dietetic interns

Clinical practice behavior scale	Maximum score per item	Dietetic interns, n=14
Access nutrition websites (government or professional associations)	5	4.4 \pm 0.8
Access medical evidence in general (journal articles, databases, clinical guidelines)	5	4.1 \pm 1.1
Access original research articles	5	3.6 \pm 1.0
Answer background questions using databases	5	3.4 \pm 1.3
Use EBP to change practice	5	3.1 \pm 1.5
Access pre-appraised evidence (Evidence Analysis Library, clinical guidelines)	5	3.0 \pm 1.2
Critically appraise research	5	2.6 \pm 1.0
Write a searchable question	5	2.6 \pm 1.2
Access Cochrane Library	5	2.1 \pm 1.0
Total clinical practice score	45	29 \pm 7.2



Knowledge score	Maximum score per item	Dietetic interns, n=14	Registered dietitian: intervention group baseline, n=22*
Interpret statistical results	0.5	0.04 ± 0.13	0.07 ± 0.18
Determine statistical results	0.5	0.14 ± 0.23	0.25 ± 0.26
Patient or problem, intervention, comparison, outcomes (PICO) refers to	0.5	0.17 ± 0.25	0.20 ± 0.25
Boolean terms reduce citations	0.5	0.32 ± 0.25	0.32 ± 0.25
First-step EBP model	0.5	0.36 ± 0.23	0.41 ± 0.20
Medical Subject Headings (MeSH) terms reduce citations	0.5	0.43 ± 0.18	0.45 ± 0.15
Determine sound research	1	0.64 ± 0.50	0.77 ± 0.43
Most appropriate study type	1	0.79 ± 0.43	0.95 ± 0.21
Highest study in hierarchy	1	0.79 ± 0.43	0.82 ± 0.39
Compose PICO	2	1.07 ± 0.65	1.82 ± 0.50
Characteristics of sound randomized controlled trial	2	1.39 ± 0.56	1.45 ± 0.43
Valid EBP resources	2	1.61 ± 0.21	1.45 ± 0.43
Total knowledge score	12	7.75 ± 1.34	9.02 ± 1.85

* Data from the study by Vogt and colleagues [21].



Classes of Research Reports

Primary Reports of New Data Collection

- A randomized, controlled trial
- B cohort study
- C nonrandomized trial with concurrent or historical controls
 - case-control study
 - study of sensitivity and specificity of a diagnostic test
 - population-based descriptive study
- D cross-sectional study
 - case series
 - case report

Reports That Synthesize or Reflect on Collections of Primary Reports

- M meta-analysis
 - systematic review
 - decision analysis
 - cost–benefit analysis
 - cost-effectiveness study
- R narrative review
 - consensus statement
 - consensus report
- X medical opinion



Research Reports Quality Categories

PLUS (+)

- Y N 1. Were the inclusion and exclusion criteria exceptionally well defined and adhered to?
- Y N 2. Were no serious questions of bias introduced in the study (eg, through the processes of subject selection, endpoint selection, observation, or data collection)?
- Y N 3. Does the report show a statistically significant and clinically important treatment effect or, for a negative conclusion, have high power?
- Y N 4. Are the results widely generalizable to other populations?
- Y N 5. Were other characteristics of a well-designed study clearly addressed in the report (eg, treatment and control groups comparable at baseline, compliance with the intervention, use of intention to treat analysis, all important outcomes measured, statistics appropriate for study design)?

If the answer to 2 or more of the above questions is yes, the report may be designated with a plus on the Conclusion Grading Worksheet, depending on the work group's overall evaluation of the report.

MINUS (-)

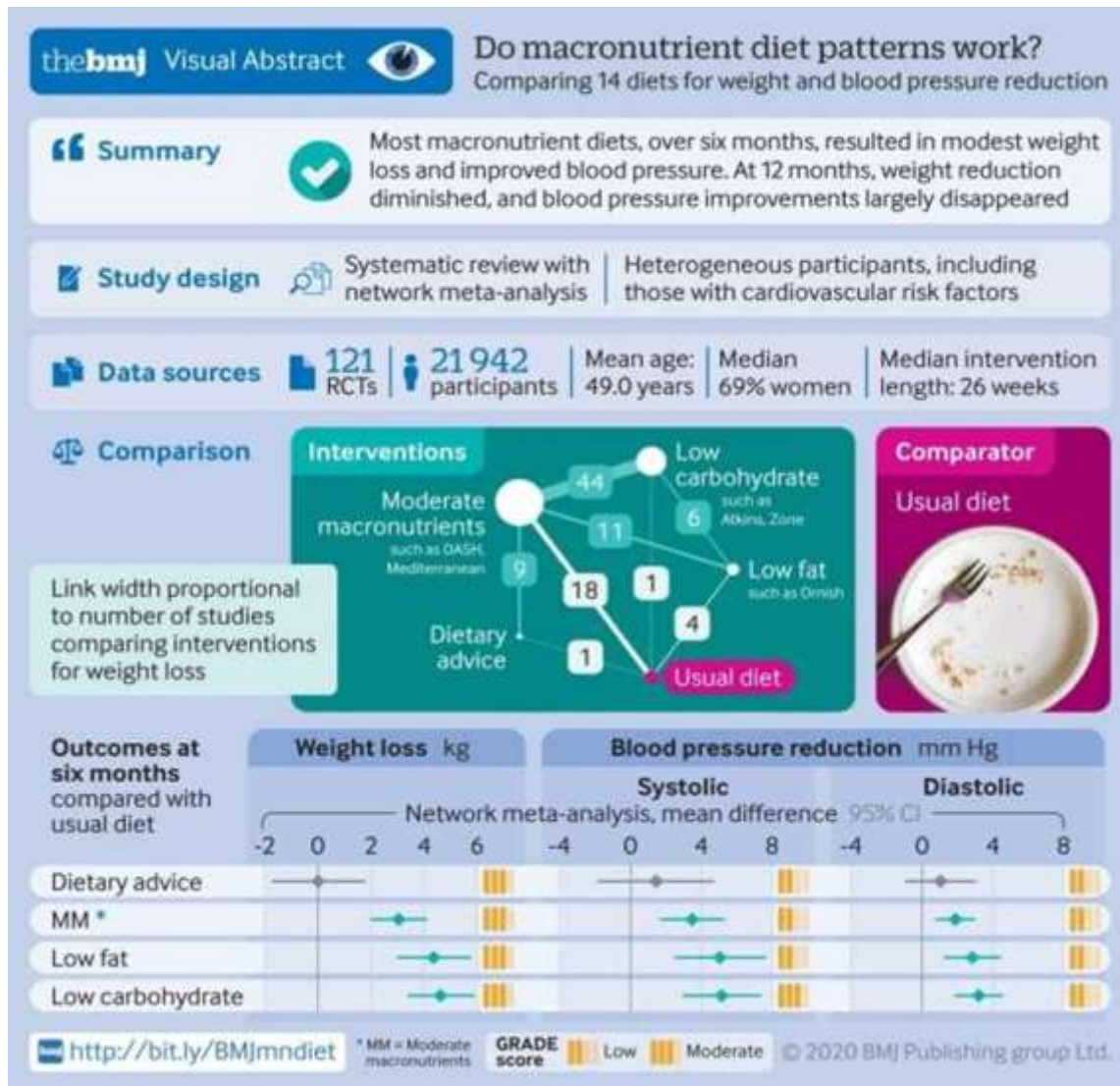
- Y N 1. Were the inclusion and exclusion criteria unclear, or was there evidence of failure to adhere to defined criteria?
- Y N 2. Were serious questions of bias introduced in the study (eg, through the processes of subject selection, endpoint selection, observation or data collection)?
- Y N 3. Does the report show a statistically significant but clinically insignificant effect or, for a negative conclusion, lack power and sample size?
- Y N 4. Are the results doubtfully generalizable to other populations?
- Y N 5. Were other characteristics of a poorly designed study clearly evident in the report (eg, treatment and control groups different at baseline, low compliance with the intervention, important outcomes not measured, inappropriate statistics for study design)?

If the answer to 2 or more of the above questions is yes, the report may be designated with a minus symbol on the Conclusion Grading Worksheet, depending on the work group's overall evaluation of the report.

NEUTRAL (o)

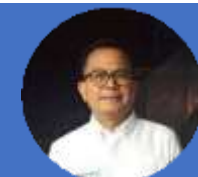
If the answers to the questions pertaining to the PLUS or MINUS criteria do not indicate that the report is exceptionally strong or exceptionally weak, the report should be designated with a neutral symbol on the Conclusion Grading Worksheet.





BMJ 2020; 369

Conclusions:
Moderate certainty evidence shows that most macronutrient diets, over six months, result in modest weight loss and substantial improvements in cardiovascular risk factors, particularly blood pressure. At 12 months the effects on weight reduction and improvements in cardiovascular risk factors largely disappear



2. Critical Thinking & Social-Emotional Skills

Competition for professionals (dietitians) will increase in 3 Major Areas by 2030:

1. Higher cognitive skills:

- ✓ Advanced literacy and writing
- ✓ Quantitative and statistical skills
- ✓ Critical thinking and complex information processing
(Problem solver, health professionals, consultants, lawyers, accountants, research analysts, editors, community developers, etc)



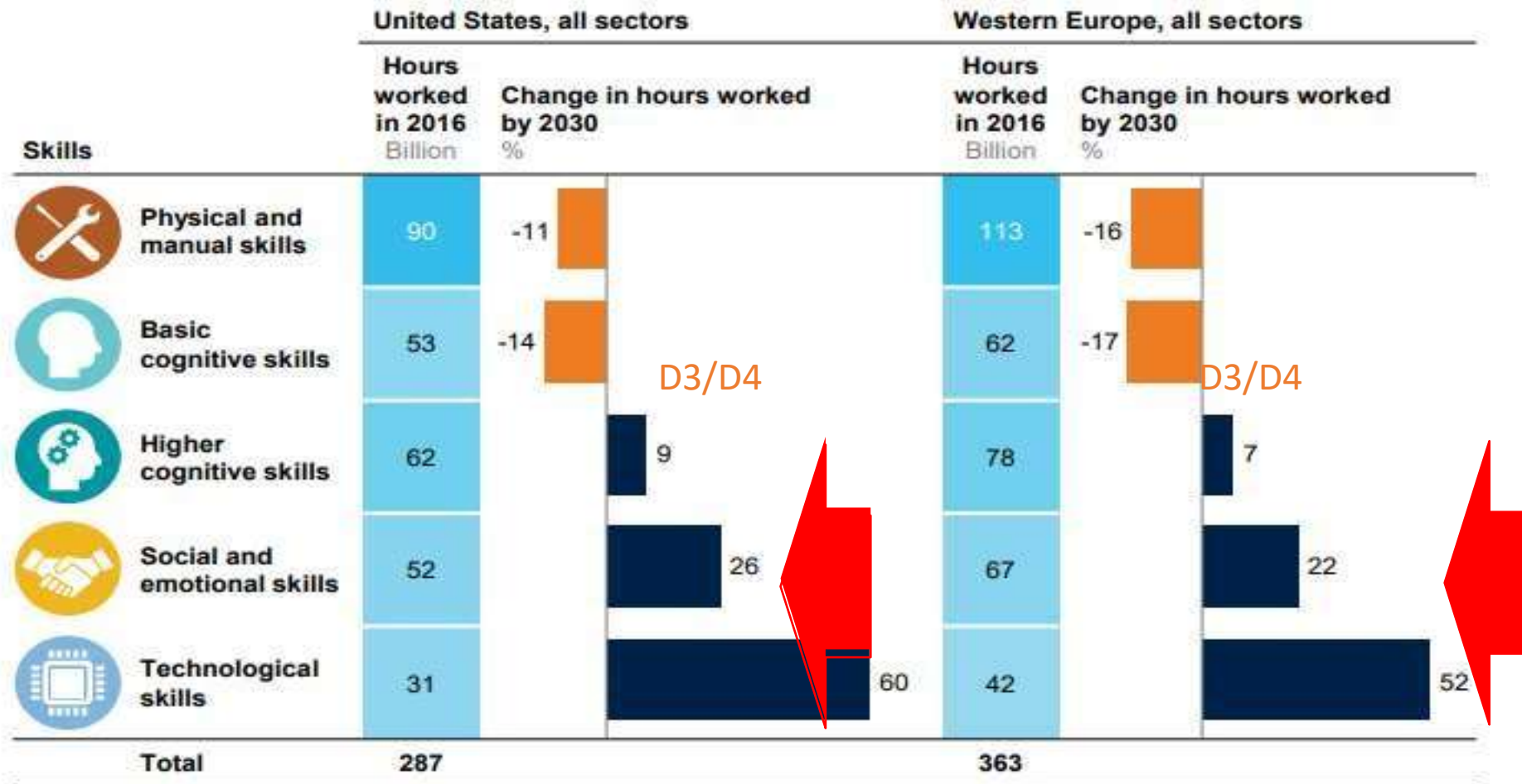
2. Social and emotional skills (Soft skills):

- ✓ Advanced communication/empathy
- ✓ Negotiation and marketing
- ✓ Ability to learn continuously
- ✓ To manage others and to be adaptable
(Business developers, marketers, front liner officer, consultants/counsellors, Health professionals involved in advisory, programmers, PR).

3. Technological skills:

- ✓ IT skills
- ✓ Data analysis
- ✓ **System analysis**
- ✓ Engineering
- ✓ **Multi-disciplinary** research.
(Skills most highly rewarded as companies, software developers, engineers, robotics, analysts, scientific experts, etc).





NOTE: Western Europe: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Italy, Netherlands, Norway, Spain, Sweden, Switzerland, and the United Kingdom. Numbers may not sum due to rounding.

SOURCE: McKinsey Global Institute workforce skills model; McKinsey Global Institute analysis.



Evolution in skill categories

% of time

Change in hours worked

% difference

Skill categories



Physical and manual skills



Basic cognitive skills



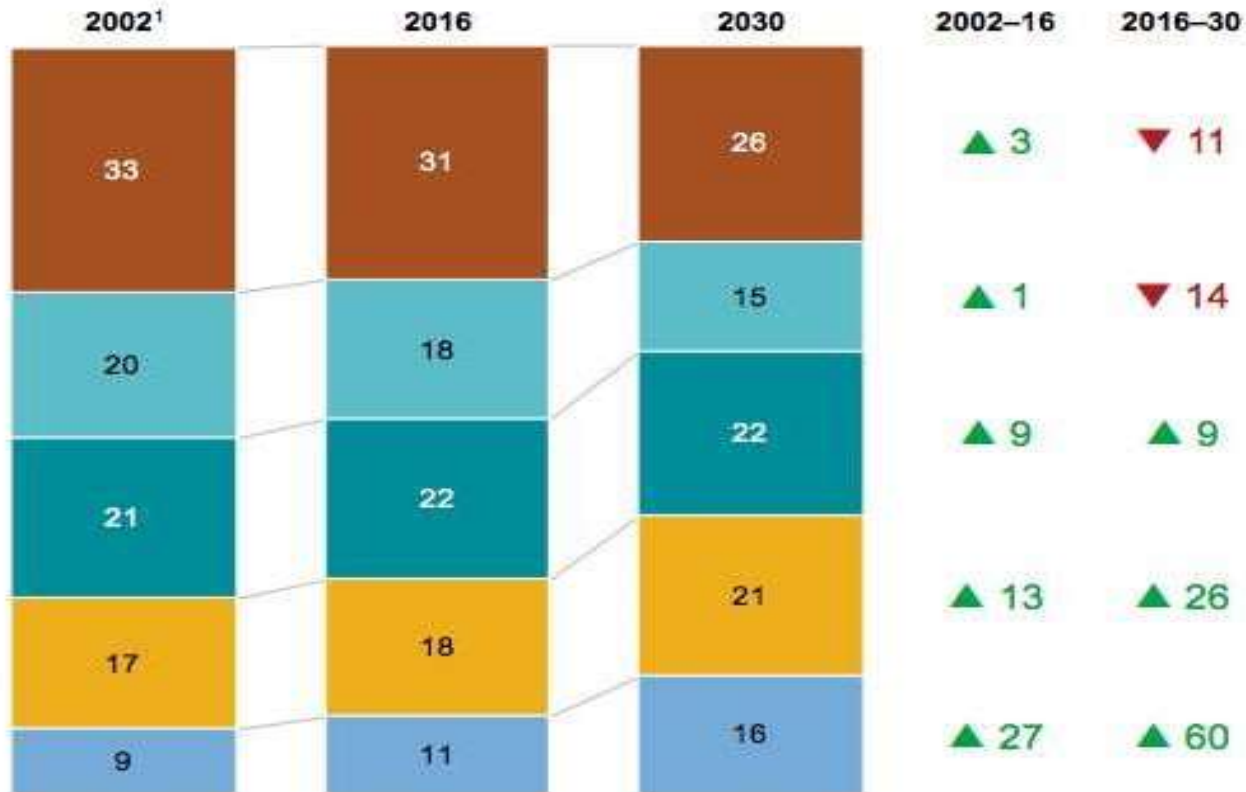
Higher cognitive skills



Social and emotional skills



Technological skills



¹ Calculated using the 2004 to 2016 CAGR extrapolated to a 14-year period.

NOTE: Based on difference between hours worked per skill in 2016 and modeled hours worked in 2030. Numbers may not sum due to rounding.

SOURCE: U.S. Bureau of Labor statistics; McKinsey Global Institute workforce skills model; McKinsey Global Institute analysis



Self-intropection

Please Introspect yourselves (Do you have Social Skills?):

1. Presence and authenticity (mampu apa adanya, jujur, asli dan tulus)
2. Empathy (mampu merasakan apa yang dirasakan orang lain)
3. Clarity (mampu berkomunikasi dengan jelas dan sopan)
4. Situational awareness (mampu membaca situasi/perasaan orang - peka)

Please Introspect yourselves (Do you have Emotional Skills):

1. Knowing your strengths and weaknesses (memahami +/-)
2. Recognize your own feelings (memahami perasaan & kesehatan diri)
3. Can "read" other people (mampu "membaca" orang)
4. Not easily offended (tidak mudah tersinggung)
5. Easy to apologize and be grateful (mudah memaafkan, minta maaf & bersyukur)
6. Open minded (Mampu mendengar & berpikiran terbuka)



❑ **Critical thinking is the ability to think clearly and rationally about what to do. It includes the ability to engage in reflective and independent thinking.**



A basis for:

- 1. Creativity**
- 2. Quality information/communication**
- 3. Quality research**
- 4. Quality solution**
- 5. Quality innovation**

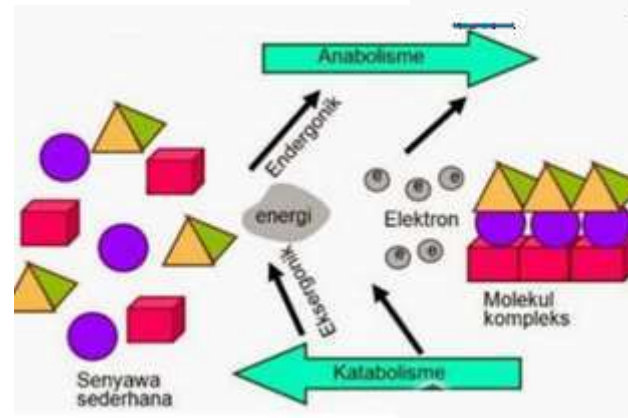
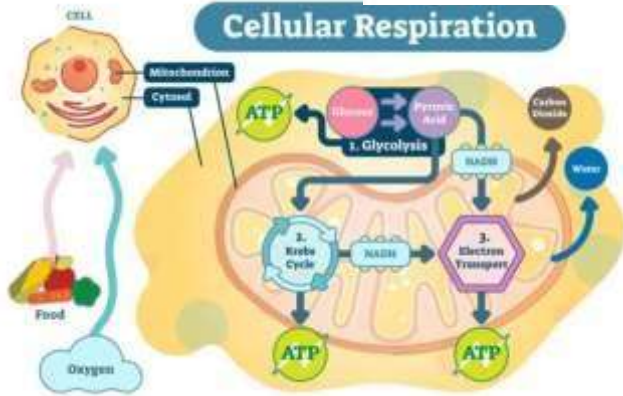
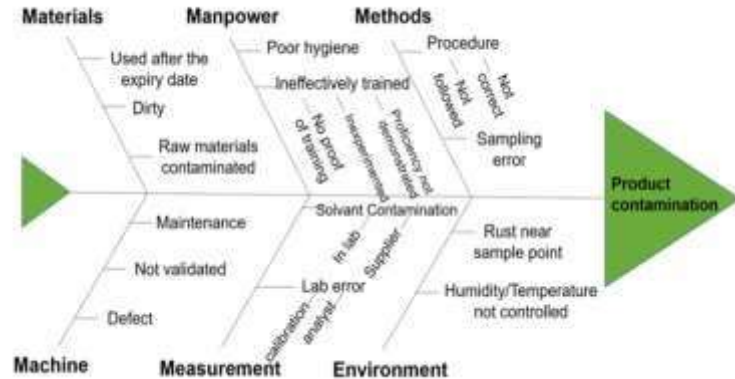
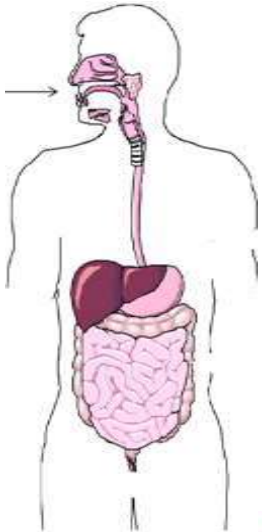
- 1. Understand the logical connections between ideas**
- 2. Identify, construct & evaluate (relevance/not) arguments or ideas**
- 3. Detect inconsistencies and common mistakes in reasoning**
- 4. Able to justify problems and alternative solutions**
- 5. Solve problems systematically**

Critical thinking is important in the VUCA era:

- Volatility/mudah berubah**
- Uncertainty/ketidak-pastian**
- Complexity/komplek**
- Ambiguity/kurang jelas - meragukan**



Every nutrition students learn in systematic way, a framework, system thinking, multi diciplines & multi sectors22



Prof Hardinsyah MS PhD
 Professor in Nutrition FEMA dan Ketua MWA IPB University
 Ketua Umum AIPGI dan PERGIZI PANGAN Indonesi
 Immediate Past President of FANS9



3.

Professionalism and None plagiarism

PROFESSIONALISM



Emily (Pierce) Horstman RD, LDN

Lead Registered Dietitian



OnPoint
Nutrition



Work With Professionals

Our staff members are healthcare and nutrition professionals, not salespeople.



Prof Hardinsyah MS PhD
Professor in Nutrition FEMA dan Ketua MWA IPB University
Ketua Umum AIPGI dan PERGIZI PANGAN Indonesi
Immediate Past President of FANS9





5 WAYS ONLINE NUTRITION COUNSELING CAN HELP YOU LOSE WEIGHT

FEBRUARY 18, 2020



DOES YOUR BUSY LIFESTYLE GET IN THE WAY OF YOUR WEIGHT LOSS GOALS? WHETHER YOU'RE OVERWHELMED WITH WHERE TO START OR YOU'RE ALREADY MAKING GOOD CHOICES, BUT NOT SEEING RESULTS, LEARN HOW A VIRTUAL NUTRITIONIST MAY JUST BE YOUR SECRET WEAPON.

The days of fad dieting are quickly on their way out.



BE PROFESSIONALS

6-Be



Bovee & Till LLC (2018)



Tips for practicing your professionalism (NACE, 2020)

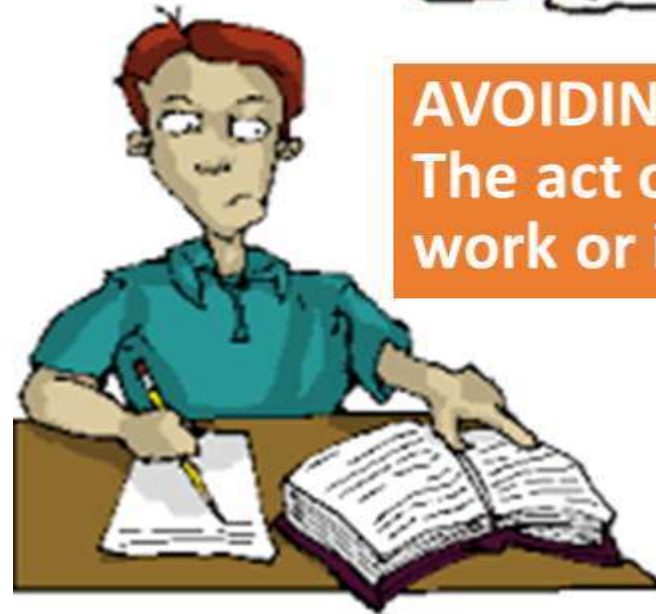
1. Personal brand
2. Communicate effectively
3. Build relationship
4. Demonstrate integrity
5. Take initiative
6. Be disciplin & efficient
7. Be productive
8. Be adaptive
9. Be a problem-solver
10. Be excellence



NO
PLAGIARISM,
PLEASE



AVOIDING
The act of presenting another's
work or idea as your own





Intentional Plagiarism	Unintentional Plagiarism
1. Stealing or copying another work, creativity or innovation	Failure or forgot to write the citation and reference (poor documentation)
2. Stealing or copying another idea or writing/paper	Failure or forgot to use your own words and style (Careless paraphrasing)
3. Cutting and pasting a block of text from another without citation & reference	Taking work/article/ that have been created elsewhere and turning it in again without changes
4. Web publishing without permissions of creator or author	



HOW TO AVOID PLAGIARISM

1. Do not steal or use or copy another's work as your own

2. Quotation, citation and reference

3. Paraphrasing, citation and reference

4. Summarizing, citation and reference

5. Use plagiarism checker



HOW TO PARAPHRASE

1. Read the original source carefully. It is essential that you understand it fully.
2. Identify the main point(s) or essential information or key words.
3. Rewrite it in your own words (use synonym where appropriate), included the main points and essential information, and style/structure (active to passive or vice versa), but keep the original meaning
4. It can be use quotation marks (“ ”) to retain unique phrases; and it can be combined with another citation, which is relevant
5. Change the order in which information/ideas are presented, as long as they still make sense in a different order.
6. Review your paraphrase to check it accurately reflects the original text but is in your words and style.
7. Record the source, including the page number, for reference
8. If you do not sure. Please use plagiarism checker



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best you'll ever find

70% Plagiarized
30% Unique

Technology can be the knowledge of techniques, processes, and the like, or it can be embedded in machines to allow for operation without detailed knowledge of their workings. The simplest form of technology is the development and use of basic tools.

Content Link

Technology can be the knowledge of techniques, processes, and the like, or it can be

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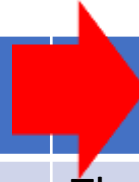
Example of Paraphrase:

Original	Paraphrasing
<p>The DASH (Dietary Approaches to Stop Hypertension) eating plan is an acceptable eating pattern for people who have diabetes. In addition to promoting blood pressure control, this eating pattern has been shown to improve insulin resistance, hyperlipidemia, and even overweight/obesity. This balanced approach promotes consumption of a variety of foods (whole grains, fat-free or low-fat dairy products, fruits, vegetables, poultry, fish, and nuts) and is appropriate for the entire family (Campbell AP, 2017)</p>	<p>The -Dietary Approaches to Stop Hypertension (DASH) that promote eating variety of seven food groups, namely whole cereals, fruits, vegetables, poultry, fish, nuts, and reduced-fat dairy products, which was originally intended to control blood pressure, is now can be used for diabetic people. Beside reducing blood pressure, this diet also reducing body weight and insulin resistance, as well as- improve hyperlipidemia (Campbell AP, 2011)</p>



Original

The DASH (Dietary Approaches to Stop Hypertension) eating plan is an acceptable eating pattern for people who have diabetes. In addition to promoting blood pressure control, this eating pattern has been shown to improve insulin resistance, hyperlipidemia, and even overweight/obesity. This balanced approach promotes consumption of a variety of foods (whole grains, fat-free or low-fat dairy products, fruits, vegetables, poultry, fish, and nuts) and is appropriate for the entire family (Campbell AP, 2017)



Summarising

The DASH (Dietary Approaches to Stop Hypertension) can be used to improve blood pressure, insulin resistance, hyperlipidemia and overweight (Campbell AP, 2017)

4. Closing Statements

1. The Dieticians quality services depends on their-competencies, in which be determined by how you apply EBP
2. You will be success or be winners if you have a better critical thinking, social and emotional skills
3. Once you lie or plagiarism in your office, your practice, and Your team, then people will not believe on you and your career will be gloomy and ruined

I wish success be always with you all my dear students2



Congratulations towards and achieving your goals on time – be a Dietitians



terima
kasih

