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Assessment Of Health Literacy Level In 18-30 Year-Old Adults, An Iranian Experience

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Objective: *Health literacy is knowledge for comprehension, assessment and achievement of health and benefit of it in life finally to health promotion. People, who have little health literacy, have less knowledge about their health condition therefore they don't take sufficient preventive services instead they receive more hospital and emergency units' services. Identification and promotion of health literacy level is one of the best solutions to increase social health and play important role in making healthy social in future, too.*

Design and setting: *This descriptive study, about 170 people (ranging from 18-30 year-old) who referred to Shemiranat health network in end of June till mid-August 2016. Health literacy data were collected through standard questionnaire that its validity and reliability was proven by Montazeri et al study (2014). Data were analyzed by SPSS ver.21 software and statistical analyses such as independent T-test, ANOVA were used.*

Findings: *The results showed that internet was the most common way to access information about health (40.4%) and infrequent information source was IVR (1.4%). The mean of health literacy level was estimated as marginal health literacy. There was statistical significant relationship between*

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health literacy level and source of information, age and education level but there was no statistical significant relationship between health literacy level and job and gender.

Conclusion: *Thus public awareness and constructing web sites related to health by Health Networks and administrate them will effect on people health promotion.*

Keywords: *Health Literacy, Shemiranat Health Network, Tehran.*

Introduction

Health literacy as a widespread concept in health promotion was mentioned in health literature from 1970 (Javadzade et al. 2012, Nielsen-Bohlman, Panzer and Kindig 2004, Organization 1998, Parker et al. 1999). The World Health Organization has defined health literacy as one of the most important determinants of health (Nielsen-Bohlman et al. 2004). Bohlman, Panzer, Kindig have introduced health literacy as a set of capacities, access skills, comprehension, information assessment in health services and health care utilization in order to obtain health promotion (Nielsen-Bohlman et al. 2004). According to WHO, health literacy is social and cognitive skills determine individuals ability and motivation to obtain and access information and realizing them to make suitable decision for medical health care (Kickbusch Wait and Maag 2005, Nielsen-Bohlman et al. 2004, Organization 1998). Sihota, Lennard have declared reading, listening, analyzing, making decision and ability to hide them in health and hygiene situation, it does not necessarily related to years of education and reading ability (Sihota and Lennard 2004).

Health literacy is an important index in health care costs and results. Health care's system needs a high health and hygiene literacy level (Baker 2006, Peyman 2016). Dodson et. al. and Bohlman et al revealed that health literacy describes ability of information interaction and health services interaction. This term considers people capacity to obtain, interpretation, and information conception and health services for making better decisions (Dodson, Good and Osborne 2015, Nielsen-Bohlman et al. 2004). Health literacy means physical health including knowledge of healthy diet, self surveillance, and first aid skills and how to search health information from existing sources in libraries and websites (Jorm 2000). Health literacy is one subset of literacy skills. "Health literacy" implies individuals and communicative factors. Total literacy skills include individuals' ability for reading, writing, language comprehension, (print literacy) speaking, vocal language comprehension, numbers

utilization in daily life (counting) (Nielsen-Bohlman et al. 2004, Rothman, Montori, Cherrington and Pignone 2008). Considering the importance of health literacy, it became a global challenging issue in 21st century (Nutbeam and Kickbusch 2000). WHO through a report introduced health literacy as the most undeniable determinants of health, therefore it was advised to all countries to conducting an association including people who affected by this issue for monitoring and coordinating strategic activities concerning health promotion in societies (Health and Organization 2008, Tol, Pourreza, Tavasoli and Rahimi Foroshani 2012).

In developing countries, people are facing with information and health information pollution increasingly (WHO Organization 2016). Confronted with complex health systems for human even people with adequate literacy is onerous (Chew, Bradley and Boyko 2004) Thus having health literacy is necessary(WHO Organization 2016). People those have high level of health literacy have more welfare and health and pleasurable life too (WHO Organization, 2016).

Awesome outcome of health literacy appears in health services utilization. Those have high health literacy have better collaboration, Moreover they accept directions and perform well (Peerson and Saunders 2009). On the other hand individuals with inadequate health literacy have less knowledge about health and receive fewer preventive services, chronic disease control is low too. Their physical and mental performance is poor. They don't pay attention more to oral and written information presented by Health professionals. Their participation was less in treatment decision and hence they have poor health status (Chew et al. 2004, Peerson and Saunders 2009, Powers, Trinh and Bosworth 2010). Their tendency to risky behavior and health stimulants is more prevalent (WHO Organization 2016). People with inadequate health literacy need to hospital services more and they should pay medical costs much and the rate of death in those people is considerable compare to individuals with

high health literacy (Chew et al. 2004, Peerson and Saunders 2009, Powers et al. 2010). Although it hasn't already distinguished that how does health literacy affect on health, but there are many proofs showing health deficiency result from inadequate health literacy (M. Williams, Parker, Baker, Coates and Nurss 1995). Subsequences of low health literacy appear directly and indirectly (Parker et al. 1999). Low health literacy leads to socioeconomic loss and sometimes prevents people to have social interaction and not to achieve their goals. Low health literacy causes society economic loss too (Karimi, Keyvanara, Hosseini, Jafarian and khorasani 2014, Kickbusch et al. 2005, van der Heide et al. 2013, M. V. Williams, Baker, Parker and Nurss 1998). Understanding knowledge, attitude of people about health literacy components and skills is very momentous. It seems that health literacy efforts impacts on socioeconomic reform (van der Heide et al. 2013). Developed and wealthy countries such as the United States have experienced limited health literacy probably (Tique et al. 2016).

Health literacy can be used in different aspects such as Individual patient care to community-level development completion and to improve individual's admission and people empowering and societies (Batterham, Hawkins, Collins, Buchbinder and Osborne 2016). Due to important role of health literacy in making decision related to health, health literacy assessment as a substantial issue and basic tools for society's health level promotion and health services quality has attended by policy markers (Organization 2016, Paasche-Orlow, Parker, Gazmararian, Nielsen-Bohlman, and Rudd 2005, Tavousi et al. 2016). Health literacy level of students, library users, the elderly and pregnant women is evaluated considered to importance of Health literacy in public health growth. Some studies showed health literacy is inadequate (Banihashemi, Amirkhani and Haghdooost 2007, Ghanbari, Majlessi, Ghaffari and Mahmoodi Majdabadi 2012, Khosravi and Ahmadzadeh 2016, Reisi et al. 2012).

According to health networks dispersion and key role in health services and public health literacy promotion, health literacy in these centers is necessary to effective planning for community health promotion. Based on Shemiranat health center website, this center is one of the developed center which has achieved health indicators in high level centers in Iran, people referred to this center for health care intensively. Considering the importance of this crucial issue, more research has conducted in group age 18- 19 year-old (Banihashemi et al. 2007, Ghanbari et al. 2012). There was no study conducted in health networks. The aim of this study was to assess the health literacy level in 18-30 year-old referred to Shemiranat Health Network in Tehran.

Materials and Methods

This study was descriptive in practical. It was conducted among adults aged 18-35 years referred to Shemiranat Health Network in Jun-August 2016 in Tehran, Iran. The inclusion criteria were ability to read and write among the age group of 18-30 years and face-to-face referral to Shemiranat Health Network. The data collection tool was standard Iranian adult health literacy questionnaire the validity and reliability of which was proved by Montazeri et al. (2014) (Montazeri et al. 2014). It includes five (5) components and thirty-three (33) items. The break up wise components are availability (6 items), reading skill (4 items) understanding (8 items), assessment (4 items), making decision and utilization of health information (12 items) (Parker, Ratzan and Lurie 2003). The research questionnaire framework includes a total of 33 questions which scored based on Likert 1 to 5 options with score of 1 till 165. The scores were classified as: 1-55, adequate health literacy, 56-109, marginal health literacy and 110-165, inadequate health literacy and lower score interpreted high level health literacy. By Cochran formula, sample size was determined about 170 people. Total 170 questionnaires was distributed and collected after completion. Statistical analyses were performed using SPSS software ver.21. Descriptive statistics were used to mean, SD and percentage of

variables. ANOVA test and independent T-test analyzed relationship between health literacy and age, educational attainment, health information source gender and job.

Results

Characteristics of participants are summarized in Table-1.

Table-1. Comparison of the mean and relation analysis of health literacy according to different variables.

P.value	Health Literacy Level ¹		Dimensions of Health Literacy						The Number (Percentage)	Variable	
	Adequate Health Literacy	borderline Health Literacy	Health literacy score	Decision-making and use of information	Evaluation	understanding	Reading Skill	Access			
	The Mean (SD)										
0.149	72 (80.9%)	17 (19.1%)	69.62(16.08)	26.53(7.97)	9.87(3.57)	12.71(4.17)	8.3(2.48)	12.21(3.83)	89(52.4%)	Female	Gender
	69 (85.2%)	12 (14.8%)	73.28(16.9)	28.41(8.74)	9.91(3.13)	13.98(4.67)	8.96(3.07)	12.28(3.82)	81(47.6%)	Male	
0.015	12 (80.0%)	3 (20.0%)	72.27(17.93)	26.47(8.81)	9.6(2.53)	14.6(4.67)	9.47(2.85)	12.13(3.87)	15(8.8%)	18-21	Age
	22 (84.6%)	4 (15.4%)	72.15(17.24)	27.81(8.15)	10.27(4.57)	13.92(4.47)	8.0(2.37)	12.15(3.25)	26(15.3%)	21-24	
	39 (83.0%)	8 (17.0%)	72.51(17.67)	27.72(8.6)	10.11(3.09)	13.3(5.24)	8.62(3.25)	12.77(4.01)	47(27.6%)	24-27	
	68 (82.9%)	14 (17.1%)	70.29(15.59)	27.3(8.36)	9.7(3.23)	12.9(3.89)	8.39(2.58)	12.0(3.89)	82(48.2%)	27-30	
0.887	20 (87.0)	3 (13.0%)	73.09(15.39)	29.0(7.52)	10.35(3.88)	12.74(3.19)	8.96(2.77)	12.04(3.18)	23(13.5%)	Unemployed	Job
	18 (94.7%)	1 (5.3%)	71.89(12.44)	28.68(8.2)	9.58(2.89)	12.58(3.82)	7.89(2.05)	13.16(3.96)	19(11.2%)	Housewife	
	22 (88.0%)	3 (12.0%)	71.24(15.91)	26.8(9.07)	11.0(4.06)	13.44(3.07)	8.6(2.08)	11.4(3.91)	25(14.7%)	University Student	
	7 (77.8%)	2 (22.2%)	75.67(19.73)	28.11(10.25)	9.44(1.51)	15.0(5.27)	9.89(3.18)	13.22(3.99)	9(5.3%)	Student	
	74 (78.7)	20 (21.3%)	70.46(17.56)	26.88(8.33)	9.59(3.22)	13.41(5.04)	8.33(3.0)	12.24(3.9)	94(55.3%)	Clerck	
0.003	31(93.9)	2 (6.1%)	75.97(12.87)	27.91(8.27)	10.15(2.59)	14.58(4.57)	9.42(2.68)	13.91(3.16)	33(19.4%)	Diploma	Degree
	8 (66.7%)	4 (33.3%)	62.33(18.62)	22.58(8.59)	9.67(4.83)	11.33(2.81)	8.17(2.66)	10.58(3.42)	12(7.1%)	Associate degree	
	63 (84.0%)	12 (16.0%)	74.53(18.0)	29.63(8.8)	10.04(3.66)	13.79(4.84)	8.63(3.0)	12.45(3.82)	75(44.1%)	BA	
	30 (75.0%)	10 (25.0%)	64.82(13.46)	25.0(6.8)	9.25(2.93)	12.1(3.72)	7.7(2.2)	10.77(3.19)	40(23.5%)	MA	
	9 (90.0%)	1 (10.0%)	69.4(71.36)	24.8(27.42)	10.7(9.89)	12.9(13.32)	7.9(8.49)	13.1(12.25)	10(5.9%)	Ph.D	
0.035	54 (84.4%)	10 (15.6%)	69.73(15.23)	25.2(7.4)	10.39(3.46)	13.33(14.42)	8.33(2.81)	12.48(4.07)	64(22.5%)	Asking Doctor	Health information resources
	93 (80.9%)	22 (19.1%)	70.23(16.74)	27.43(8.24)	9.76(3.43)	13.09(4.32)	8.17(2.65)	11.8(4.22)	11.5(40.4)	Internet	
	2 (50.0%)	2 (50.0%)	52.0(18.49)	16.5(5.2)	8.0(5.23)	10.0(2.16)	7.0(2.16)	10.5(5.2)	4(1.4%)	IVR	
	28 (75.7%)	9 (24.3%)	69.84(19.11)	26.73(9.91)	8.7(2.83)	13.62(4.88)	8.73(2.81)	12.05(3.4)	37(13.0%)	Radio&TV	
	14 (63.6%)	8 (36.4%)	65.77(19.51)	25.41(10.15)	9.5(4.16)	12.45(4.13)	7.64(2.44)	10.77(3.34)	22(7.7%)	Publications	
	25 (96.2%)	1 (3.8%)	79.08(16.58)	29.27(10.03)	11.27(3.62)	15.27(4.36)	9.38(2.65)	13.89(3.87)	26(9.1%)	Asking Friends	
	13 (76.5%)	4 (23.5%)	67.18(16.56)	25.06(9.86)	10.18(4.43)	12.59(3.59)	8.12(2.18)	11.24(4.71)	17(6.0%)	Training Brochures	

Most of participants were female (52.4%) and rest (47.6%) were male. The Mean age of participants was 25.83 years (ranging from 18-30). About 44.1 percent were BS and the a few (5.9%) were Ph.D. and 75.97% were Diploma. Most of samples were employee (55.3%). The majority of respondents (40.4%) expressed internet as an information access resource and just 1.04% had chosen IVR. The mean of health literacy score for male (73.28) was more than female (69.62). The mean of 24-27year-old was the highest about 72.51 and in 28-30 year-old was the lowest amount 70.29. The highest mean in job category was allocated to students (75.67) and the lowest average was for employees (70.46). In diploma respondents the mean score of health literacy was 75.97 and for those had associated degree was 62.33. About health information resource, mean score of asking from friends and relatives was 79/08 and IVR usage was 52. Through ANOVA test, statistical significant relationship was found between health literacy level with age, educational attainment, health information source respectively (P=0/015), (P= 0.003), (P= 0.035). In addition no significant relation was observed among health literacy level with job and gender. Totally, according to our results 82.90% of participants had adequate health literacy and 17.10 % had marginal health literacy (table 1).

Table 2. Frequency of calculated scores based on different category

<i>S.D</i>	<i>Mean</i>	<i>Max.</i>	<i>Min.</i>	<i>No.</i>	<i>Health Literacy components</i>	The Ranking Dimensions of Health Literacy
2.78	8.49	15.00	4.00	170	Reading skill	1
3.36	9.89	19.00	4.00	170	assessment	2
3.82	12.25	24.00	6.00	170	availability	3
4.45	13.31	27.00	7.00	170	comperhension	4
8.37	27.42	49.00	12.00	170	Making decision ang information usage	5
16.53	3671.	109.00	33.00	170	Total (health literacy)	

Among health components, top score was related to ‘reading skill’ (8.49), and making ‘decision and information utilization’ got the lowest score (27.42). Health literacy average of

18-30 year-old who participates in present study from Shemiranat Health Network, was in ‘marginal level (between 56 and 109)’ health literacy (71.36) (Table 2).

Discussion

Health literacy includes a variety of skills such as reading, listening, comprehension, access, information assessment, health services and utilization for health improvement (Nielsen-Bohlman et al. 2004, Sihota and Lennard 2004) and it has undeniable effect on Community Health (Banihashemi et al. 2007). Health literacy is a global concerning issue, based on WHO statement, health literacy has central role in assigning health inequality in both rich and poor countries (McLaughlin 2009). Considering to our findings 82.90% of respondents had adequate health literacy and 17.10% were in marginal health literacy. Another finding also showed that Health literacy score mean in male (73.28) was more than female (69.62), it was agree with Khosravi and Ahmadzadeh survey. Based on the results, there was no relationship between health literacy and gender as Lindstrom (Lindstrom 2007) and Kleindl (Kleindl 2007) studies. Our findings were in consistent with Rafizadeh et al study about gender, education attainment and health information source. The majority of health literacy mean was observed in 24-27 age groups. While in Reisi et al, Artinian and Cho et al studies (Artinian, Lange, Templin, Stallwood and Hermann 2003, Cho, Lee, Arozullah and Crittenden 2008, Khosravi and Ahmadzadeh 2016, Reisi et al. 2012), statistical significance relationship was found between gender and health literacy.

Present study has shown several statistical significant relationships between health literacy levels with age, education attainment, and health information source in contrast there was no significant relationship among health literacy and gender and job. In Rafizadeh et al (2015) report, health literacy was associated with education, job, and information source access, but it didn't apply to health literacy with gender and age (Rafiezadeh et al., 2015). In education attainment category, those who were diploma degree had the highest score mean

(75/97). Although Tehrani Banihashemi and Tavosi have shown strong relationship between education attainment and health literacy, but according to research and health care quality agency report, despite individual health literacy levels and education association, correlation between years of education and literacy is not completely (University and Berkman 2011). Therefore, years of education is not considered merely as the valid criteria to evaluate reading skills assessment (Carthery-Goulart et al. 2009) and it is devious way to estimate health literacy based on the last educational degree (Safeer and Keenan 2005).

Totally mean of health literacy of 18-30 year-old in present study was in marginal health literacy (71.36). Other related researches confirm inadequate and marginal health literacy. Tavosi et al (1394) affirmed inadequate health literacy in Iranian adults inhabiting in urban area (Tavousi et al. 2016), in Khosravi et al study (2015) indicated inadequate health literacy in patients referred to hospitals in Bushehr city (Khosravi and Ahmadzadeh 2016). Tehrani Banihashemi et al in 2007 reported low health literacy level in five provinces of Iran (Banihashemi et al. 2007) Too Izadirad and Zareban in 2015 and Mohseni et al (Mohseni, Khanjani, Iranpour, Tabe and Borhaninejad 2015) reported low health literacy level in Region of Baluchistan and Kerman of Iran (Izadirad and Zareban 2015). National adult's health evaluation in US found inadequate health in 36% adult in 2003 (Kutner, Greenburg, Jin and Paulsen 2006) High level of health literacy in educated people confirms education role in increasing health literacy. In accordance with other research, high educated people had high health literacy (Ghanbari et al. 2012, Javadzade et al. 2012, Lindstrom 2007, Muir and Lee 2010, Rafiezadeh et al. 2015, RHIA 2012).

In conclusion, as regards asking friends and relatives and internet were the most used resources to obtain health information, community awareness and supporting websites related to health by health care centers and validity monitoring of provided information to improving quality of life and community health literacy levels seems to be effective. Generally,

according to this study indicating limited health literacy in youth population, it is necessary to plan solutions about health information supporting and providing reliable scientific products by related organs and institutions. Specialists in health and those who are producer and distributor of information should be able to set appropriate education programs, so that community health literacy would be improved.

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