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Examining Jordanians' Attitudes Towards Five Types of Developmental Disabilities

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Abstract

Background: The diagnosis and reported rates of persons with developmental disabilities (PWDDs) in Jordan is steadily increasing. Although initiatives have been implemented to improve the lives of PWDDs, attitudes towards PWDDs hinder successful inclusion in the Jordanian society.

Objectives: To examine the relationship between Jordanians socio-economic status and attitudes towards persons with developmental disabilities: autism, blindness, cerebral palsy, Down syndrome and muscular dystrophy.

Methods: Jordanians (N=259), ages 18-65 were recruited for this convergent parallel, mixed-methods study. Participants completed the modified 40-item Community Living Attitude Scale-developmental disability (CLAS-DD) and the modified Intellectual Disability Literacy Scale consisting of five vignettes, representing each developmental disability. Of the 259 participants, 32 were randomly selected for the qualitative phase of this study

Results: A one-way ANOVA was used to analyze CLAS-DD, results revealed consistent significance between all subscales and income levels. For instance, sheltering scores revealed significance between income levels >800 (Mdn= 4.0) and <180 (Mdn = 4.57) (p= 0.006). Further, using A Welch test, IDLS findings showed differences of relationship between social distance and income level. The qualitative study confirmed the quantitative analysis; however, attitude vary depending by type of contact with persons with developmental disabilities.

Conclusions: Few empirical studies related to PWDDs exist in Jordan. This foundation work can be utilized by the social, educational and public health sectors to understand determinants influencing attitudes towards persons with disabilities, prior to designing initiatives. Based on the findings, there is potential for inclusion of PWDDs in Jordan, with strategically designed disability awareness initiatives.

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Introduction

It is estimated that 14,800 Jordanian residents have a developmental disability (DD).[Al-Majali SA and Faddoul, K.J., 2008] In fact, estimates can be higher, as there may be an underreporting of persons diagnosed with developmental disabilities (DDs), as well as a lack of current publishable data regarding statistics about Jordanians with disabilities. [Waldman HB and Perlman SP, 2014] Although laws have been enacted in Jordan to protect the rights of persons with disabilities (PWDs) and promote inclusion, attitudes towards PWDs hinder persons with developmental disabilities (PWDDs) from being active members of their society, [Amr M et al. 2012] increasing the probability of negative quality of life outcomes. [Hamed R, Tariah HA, and Hawamdeh ZM, 2012] While scholarly research regarding persons with disabilities is steadily increasing in Jordan, to our knowledge, no study has attempted to examine the relationship between attitudes towards PWDDs and socio-economic status.

Quality of interaction with PWDDs may have greater

significance on attitudes towards PWDDs.[McManus JL, Feyes KJ and Saucier DA, 2011] Further, multifaceted factors such as socio-economic status, residence, culture and interaction with PWDDs, shape one's attitude towards PWDDs, daily. [Patka M, Keys CB, Henry DB, and McDonald KE, 2013; Hampton Zhu, 2011; Sheridan J, Scior K, 2013] For example, negative attitudes towards PWDDs, on specific issues, may be dependent on gender. Such is the case in Canada; compared to women, men were more likely to report discomfort towards persons with intellectual disability (PWID), whereas women were more likely to hold negative attitudes towards PWID in the areas of legal rights. [Morin D et al., 2013] Not in line with findings in Canada, a comparative study regarding pre-service teacher's perceptions and attitudes towards inclusion of students with disabilities in the UAE and Jordan reveals no correlation between participants gender and response. However, in Jordanian, pre-service teachers had a more positive outlook on inclusion and attainment of resources, which may be due to the government's continuous work to improve education opportunities for students with disabilities and special educational training for educators. [Al Zyoudi M, Al Sartwai A, and Dodin H, 2011]

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Negative attitudes may contribute to environmental, social and health barriers for PWDDs. [AlHeresh R, Bryant W, and Holm M, 2013] For instance, parking spaces and walkways accommodations for PWDs may be occupied by individuals without a disability, [Ghasemi B et al., 2011] which hinders a PWDDs ability to integrate into the environment. At the social level, PWDDs may face negative attitudes and stigma from society, which has diverse cultural and ethnic backgrounds. For example, contemplations regarding socialization, misconceptions and negative labeling are associated with awareness and attitude among ethnic minorities towards PWDDs.[Scior K et al., 2013] As for the impact on PDWDDs health, negative attitudes can result in negative outlook on health. For example, the probability of depression increased in Arab women with disabilities in the Middle-east and North African (MENA) region who experienced negative attitudes. [Kronfol NM, 2012] Overall, the negative attitudes can affect all aspects of PWDDs lives.

In Jordan, the positive and increased knowledge towards PWDDs is actively pursued. According to Amr [2011] Jordanian educators attending an inclusive education training, reported positive attitudes towards readiness to increase knowledge of inclusive education, as they could share experiences. Though there is a positive shift towards increasing knowledge of special needs students' disability, the information acquired knowledge may be general and teachers continue to lack a full understanding of the characteristic manifestations associated with a DD or how to address PWDDs health complications or behavioral concerns when presented in the classroom.[Alkhamra et al., 2012]

Purpose of Study

Our mixed-methods study provides a foundation to address a complex issue. Utilizing multiple instruments, we aim to assess the relationship between Jordanians socio-economic status and attitudes towards persons with DD specifically autism, blindness, cerebral palsy (CP), Down syndrome (DS) and muscular dystrophy (MD). Due to the lack of published literature regarding disability studies in Jordan, we hope that the findings of our study will serve as a foundation and contribution to disability-related research and initiatives in Jordan and the overall middle-east and North-African (MENA) region.

Methods

Recruitment

This study was approved by Loma Linda University Institutional Review Board (IRB). Recruitment and data collection took place between December 2015 and June, 2016. Participants had been residents of Jordan for a minimum of three years and residing in either Amman, Irbid, Madaba or Zarqa, and between 18-65 years of age. Persons having a disability or working for a disability advocacy organization were excluded from this study. Participants were recruited online and face-to-face. All participants were provided informed consent prior to joining in the study. Participants were offered an incentive, raffle of two phone/ internet cards (in each province) valued at 10 Jordanian dinars (JD) each, if they completed the entire study.

Two hundred fifty-nine Jordanian residents were recruited to participate in this study. Background data was collected on participant's socio-economic and demographic background,

ethnic/cultural background, their method of obtaining information, owning mobile phone and access to the internet, as well as their level of religiosity. Additional questions sought to identify if participants knew someone with a DD, the type and relationship.

Design

This convergent parallel mixed-method study entails a two-phase process, to better substantiate our findings.

Demographics

Although Jordan is a developing country, income levels across the nation is broad. Thus, monthly household income was categorized into 8 levels of Jordanian Dinars, ranging from <\$180(JD) to >2,000JD poor to wealthy. Due to the low response rates of persons with income levels over \$801JD, income categories were collapsed into five categories: <180, 181-300JD, 301-500JD, 501-800JD and >800JD.

Quantitative Phase

Participants completed the modified version of the Community Living Assessment Scale-Mental Retardation (CLAS-MR), [Henry et al., 1996] which consisted of 40 statements, measuring general attitudes towards PWDDs, on a 6-point Likert-scale. (1=strongly disagree to 6=strongly agree). For this study, we replaced the word mental health with developmental disability. The CLAS-MR is categorized into four subscales: empowerment, exclusion, sheltering and similarity. The empowerment subscale examines the respondent's attitudes regarding PWDDs ability to self-advocate and make decisions on issues and policies that pertain to the person with the disability. Whereas exclusion subscale examines respondents desire to isolate persons with DDs from the community. The sheltering subscale delves into the respondent's belief that PWDDs need daily supervision and protection. The similarity subscale examines the level to which respondents view PWDDs as being equal.

As for the Intellectual Disability Literacy Scale (IDLS), English [Scior K and Furnham A, 2011] and Arabic [Scior K et al., 2013] versions were modified to reflect DD as the topic of interest. Five unlabeled vignettes were presented to participants; each representing an unlabeled description of one of the DDs examined in this study. Upon reading the vignettes, participants completed two qualitative questions for symptom recognition and how to help the individual. Following, were 9 statements 7-point scale ranging from strongly disagree (1) to strongly agree (7), to identify respondent's moods towards the individuals described in each vignette. Respondents were asked about casual and intervention beliefs, 26 items each, on a 7-point scale ranging from 1 strongly disagree to 7 strongly agree. The 6-item social distance statements were also ranged on a 7-point scale. The social distance statements examined respondent's willingness for acceptance, inclusion and socialization of persons with developmental disabilities. Lastly, respondents completed a 3-item statement on similarity beliefs. A multiple-choice question asking respondents to identify types of DD was added to the scale.

Table 1 Comparison of CLAS attitude scores among different income levels

Income Levels (in JD)	Empower		Exclusion		Sheltering		Similarity	
	Paired Differences	P-value (2-tailed)	Paired Differences	P-value (2-tailed)	Paired Differences	P-value (2-tailed)	Paired Differences	P-value (2-tailed)
	Median		Median		Median		Median	
Pair 1 <180 – 180-300	-0.2308	0.124	0.3333	1.000	0.2857	1.000	-0.0871	1.000
Pair 2 <180 – 301-500	-0.2308	1.000	0.0962	1.000	0.2857	1.000	0	1.000
Pair 3 <180 – 501-800	-0.3077	1.000	0.25	1.000	0.5714	0.102	-0.0833	1.000
Pair 4 <180 – >800	-0.5769	0.003*	1	0.000*	0.5714	0.006*	-0.5833	0.000*
Pair 5 501-800 – 180-300	0.0769	1.000	0.0833	1.000	-0.2857	0.645	-0.0038	1.000
Pair 6 501-800 – 300-500	0.0769	1.000	-0.1538	1.000	-0.2857	0.415	0.0833	1.000
Pair 7 501-800 – >800	-0.2692	0.517	0.75	1.000	0	1.000	-0.5	0.026
Pair 8 301-500 – 180-300	0	1.000	0.2371	1.000	0	1.000	-0.0871	1.000
Pair 9 301-500 – >800	-0.3461	0.472	0.9038	0.000	0.2857	0.067	-0.5833	0.002*
Pair 10 180-300 – >800	-0.3461	0.782	0.6667	0.004	0.2857	0.097	-0.4962	0.002*

Note. CLAS-MR Community Living Attitude Scale-Mental Retardation²⁰ (modified to address developmental disabilities). Comparison of CLAS attitude scores among different income levels. Income refers to monthly household income, in Jordanian dollars. Kruskal-Wallis, *(p<0.005)

Qualitative Phase

Of the 259 participants, 32—who indicated initial willingness to complete the entire study—were randomly selected to participate in the qualitative phase of this study. Participants were informed about the study the method of data collection and audio recording. Those who volunteered to be in the study, were asked to sign a consent form detailing information about the study including the audio-recording.

Four focus groups, ranging from 5-8 individuals per province were conducted in a semi-structured format, giving respondents the ability to elaborate on attitudes towards persons with developmental disabilities. The foundation of the statements was designed from the CLAS [Henry D et al., 1996], IDLS [Scior K et al., 2013] and a public perceptions scale. [O’Shea et al., 2012] Each participant was asked to respond to questions regarding their attitudes towards empowerment, inclusion and educational opportunities for persons with developmental disabilities. Interviews were conducted in Arabic, recorded and manually transcribed. Transcriptions were reviewed twice, to ensure accuracy of the statements. Axial coding was used to assess the interviews.

Statistical Analysis

A Kruskal-Wallis H test was run to determine differences between the Community Living Attitudes Scale (CLAS-MR) subscales: empowerment, exclusion, sheltering and similarity, to income levels. To account for a multiple comparisons in post-hoc analysis of the CLAS subscales, a Bonferroni correction factor was used to create a new p-value threshold ($p = 0.05/10 = 0.005$). Adjusted p-values are presented in **Table 1**.

Attitudes from the IDLS was extracted by tallying the six social distance statements, obtaining a mean score for each type of disability. The One-way ANOVA was performed to determine if social distance scores, from the IDLS were different for income levels of each disability. Further analysis of the IDLS, using the Kruskal-Wallis H test, was run identify differences between additional socio-economic variables; place of residence, marital status, education level, profession and attitude.

Results

Demographics of respondents in quantitative phase of

study

Two-hundred fifty-nine Jordanians from four provinces, 26% were from Amman (n=68); 28% Irbid (n=72); 20% Madaba (n=53) and 26% Zarqa (n=66), completed this study; less than ten percent (9%, n=24,) completed the quantitative study online. The participants’ mean age was 33.57 (SD 11.46), 68% were female (n=176); 32% were male (n=83).

About a third of the respondents (36% n=93) reported being employed, (15%, n=39) indicated being unemployed, (15%, n=39) were college or university students, about a quarter (26%, n=67) were stay at home parents and less than five percent (n=14) were retired. About three percent (n=7) did not report employment status. Among the 259 respondents, less than a quarter specified being in the following professions: (10%, n=26) childcare, (5%, n=13) work as pre-kindergarten–secondary/vocational level educators and (2.3%, n=6) higher education sectors. More than half of the respondents reported (59%, n=153) knowing someone diagnosed with a developmental disability.

Income influences attitudes towards PWDDs

A Kruskal-Wallis H test (KW) was used to assess the subscales of the Community Living Attitude Scale (CLAS): empowerment, exclusion, sheltering and similarity, in accordance to income levels. The KW test revealed statistical differences between income levels and the empowerment subscale $\chi^2(4) = 14.580$, $p = 0.006$. More specifically, in comparison to low-income level (<180JD Mdn = 3.62), high-income level (>800JD Mdn = 4.19) respondents were more likely to express positive attitudes towards PWDDs ability to self-advocate ($p = 0.003$) (Table 1). Respondents with income categories in between the low-and-high categories indicated positive attitudes towards empowerment of PWDDs.

In terms of the exclusion subscale, there were significant differences between the two extreme income categories >800JD (Mdn = 1.63) and <180JD (Mdn = 2.63) ($p < 0.001$). In other words, lower income respondents expressed negative attitudes towards inclusion compared to higher income. Overall, as income increases the likelihood of positive attitude increased (**Table 1**).

Unlike the exclusion subscale, respondents in two extreme income levels somewhat agree that PWDDs need sheltering

>800JD (Mdn= 4.00) and <180JD (Mdn = 4.57) ($p= 0.006$) (**Table 1**). Meaning, PWDDs require daily assistance and supervision in their daily lives. Similar attitudes is seen among the other income levels (**Table 1**).

In terms of similarity, both income levels expressed agreement that PWDDs were similar to them, however, respondents from the higher income level indicated more positive attitudes towards PWDDs (>800 (Mdn = 4.58) and <180 (Mdn = 4.00) ($p<0.001$)) (**Table 1**). For example, respondents agree that PWDDs can have relationships with others and are willing to secure employment.

Attitudes towards inclusion is influenced by income

Next, we investigated income levels and its influence on attitudes towards persons with specific developmental disabilities. Unlike the CLAS scale, which examined general attitudes towards PWDDs, respondents were provided unlabeled vignettes describing the five DD examined in this study: autism, CP, DS, MD, and blindness. Regardless of the type of DD, respondents from all income levels expressed being unsure or negative attitudes regarding social distance towards persons with DD (**Table 2**).

Respondents of <180JD expressed almost same level of negative attitudes for all of the developmental disabilities. However, respondents with >800JD income also expressed negative attitudes, but more towards persons diagnosed with DS, MD, and blindness. Mean social distance score for blindness, was significantly different, for different levels of income, Welch's $F(4, 62.78) = 4.181, P<0.05$. Further, the Games-Howell post hoc analysis reveals an increased negative attitude in social distance score from the 501-800JD income level ($M=4.0, SD = 1.9$) to the >800JD income level ($M = 2.4, SD= 0.62, 95\% CI [0.05, 3.1]$), a mean decrease of 1.6, $SE = 0.50$, which was statistically significant ($p = 0.042$) (**Table 2**).

Table 2 Comparison of IDLS social distance for DD among different income levels using one-way ANOVA

		Income Levels					F	P
		<180JD	180-300JD	301-500JD	501-800JD	>800JD		
Autism	N	66	68	33	15	23	1.54	0.19
	\bar{x}	3.32	3.39	3.96	3.77	3.43		
	SD	1.4	1.3	1.4	1.6	0.8		
Blindness	N	62	67	35	15	20	2.49	0.04
	\bar{x}	3.01	2.96	3.06	3.98	2.40		
	SD	1.5	1.5	1.5	1.9	0.6		
Muscular Dystrophy	N	59	65	32	10	12	2.29	0.06
	\bar{x}	3.17	3.32	3.79	4.37	2.80		
	SD	1.6	1.5	1.8	1.7	0.2		
Cerebral Palsy	N	58	64	31	14	17	1.69	0.15
	\bar{x}	3.18	4.15	3.29	4.15	3.21		
	SD	1.6	1.4	1.4	1.6	0.8		
Down Syndrome	N	58	64	32	13	12	0.77	0.55
	\bar{x}	3.26	3.37	3.51	3.93	2.97		
	SD	1.6	1.5	1.6	1.8	1.1		

Intellectual Disability Literacy Scale (IDLS)²², modified to address: autism, blindness, cerebral palsy, Down Syndrome and muscular dystrophy. Income levels reflect monthly household income. One-way ANOVA, $p<0.05$

Similar observations were found in attitudes towards persons diagnosed muscular dystrophy ($p=.06$). Social distance for MD was normally distributed for the 301-500JD and 501-800JD income levels, as assessed by the Shapiro-Wilk's test ($p>0.05$). Social distance for MD scores increased from <180 ($n=59, M= 3.2, SD = 1.6$), to 180-300 ($n= 65, M= 3.3, SD= 1.5$), to 301-500 ($N= 32, M= 3.8, SD= 1.8$), to 501-800 ($n= 10, M= 4.4, SD= 1.7$), to a decrease in the >800 ($n= 12, M= 2.8, SD=0.2$) income level groups, in this order. Based on the assessment of Levene's test for equality of variances, the homogeneity of variances was violated ($p= 0.034$); thus, the Welch test was used

to determine statistical significance between social distance for MD and income level $F(4, 41.04) = 2.88, p<0.005$. Although the distribution of profession varied, there was statistical significance between profession and attitude $\chi^2(13) = 23.060, p=0.041$. Taking all different DDs, unlike CLAS test, the IDLS shows there is no dramatic difference in attitudes towards PWDDs, once respondents are exposed to vignettes.

Confirming influence of income on attitudes by qualitative study

Of the 259 participants, thirty-one participated in the qualitative phase of the study. The mean age for participants was 39.13 (range 19-65), less than half were male (42%, $n=13$), the remaining were female (58%, $n=18$). As shown in **Table 3**, 31 respondents, nearly one-third of respondents (29%, $n=9$) reported being employed as K-12 teachers; four from Madaba and five from Irbid. About thirteen percent ($n=4$) of respondents, were homemakers. While educator's monthly household income varied, one reported >800 Jordanian Dinar (JD) income, nearly half (45%, $n=17$) reported income of 180-300JD; eight of which were teachers. Less than a quarter of respondents (19%, $n=6$) reported an income of <180JD.

Table 3 Characteristics of focus group participants

Province	Characteristic	# of Participants	Mean age (range)	No. M/F
Amman	Homemaker	2	44.5 (44-45)	0/2
	Unemployed	1	46	0/1
	Construction	1	22	1/0
	Sales/ Retail	1	53	1/0
Irbid	University/ College Student	1	21	0/1
	Homemaker	2	37.5(32-43)	0/2
	Property Manager	1	50	1/0
	Physician	1	34	1/0
	Teacher (K-12)	5	32.4(28-44)	1/4
	Unemployed	1	40	1/0
Madaba	Childcare	2	48(42-54)	0/2
	Construction	1	36	1/0
	Teachers (K-12)	4	31.75(28-37)	4/0
	Unemployed	1	65	1/0
Zarqa	College/ University Student	1	19	0/1
	Cosmetologist	1	52	0/1
	Social Service	4	38.75(25-48)	0/4
	Religious/ Community Leader	1	56	1/0
Household Income (monthly)	<180JD	6		
	180-300JD	17		
	301-500JD	5		
	501-800JD	2		
	>800JD	1		

Experience with PWDDs was resonant among many respondents when discussing attitudes towards persons with developmental disabilities. Attitude was also dependent on knowledge of the developmental disabilities, regardless of income level. Overall, type of disability, severity, and gender influenced attitudes towards persons with developmental disabilities. Professional background marginally influenced attitudes. However, the combination of knowledge, age, level of religiosity, environment and professional background were identified as being related to attitudes towards persons with developmental disabilities.

When asked about the first thought that crossed their mind, when hearing "developmental disability," nearly all respondents mentioned empathy and well wishes, such as God having mercy on him or her, for persons with developmental disabilities. Terms such as "illness" were commonly used to describe developmental disability. While compassion towards PWDDs was evident, responses to specific questions regarding socialization, empowerment, sheltering, inclusion and socialization resulted in negative attitudes as noted below:

A professional stated that *the word “autism” is fairly new to us in Jordan. Up to a few years ago, people identified someone with autism as having a Jinn, needing special treatment or hormonal issues.*

The consensus among participants is that parents are primary caregivers of PWDDs, followed by specialized centers. Participants indicated that PWDDs are isolated from the public eye, in fear of being bullied, or shaming the family for having a relative with a disability. Excuses such as cultural changes, lack of community support and assistance, explained attitudes towards PWDDs:

Another professional stated, mothers... keep their child at home, so that child doesn't feel he or she is different and so people won't realize or feel the child has a disability.

Similarly, a respondent in a rural area indicated knowing some people with disabilities, whose family cares for them. They don't live alone. Many families are shy to show their child with a DD, they may hide them from the company (guests or visitors).

Although all but one respondent indicating not having a child diagnosed with a DD, the response of potentially having a child with a DD resonated the current attitudes of fear, concern and protection. Interestingly, having a family member with a DD slightly improved attitudes towards PWDDs, post-awareness.

Another professional stated:

The father, siblings or society will they, accept or reject the child? A mother is the first to accept, in the beginning she may question “why” but in the end, she will accept because she's a mother. I lived in a home with someone with Down syndrome. My grandmother treated her son with DS as if he didn't have any feelings or sensory. She thought it was normal to bathe him in cold water during the winter. Because we grew up in this type of environment, the misconception didn't cross my mind until I grew up and was exposed to the correct information. I realized that we have the same sensory feelings. My actions with him changed.

A professional highlighted how attitudes are dependent on the type of disability:

If it was mental the concern is great, from the perspective of safety and fear, because people will be concerned about nuisance, their kids, because they can be violent such as breaking property or attacking a child.

Attitude towards PWDDs were identified as being dependent on the type of disability, as stated by a homeowner residing in an urban area:

When I gave birth, the doctor told me my daughter had a disability. I freaked out and became stressed I said... she looks normal. I went to so many doctors. I was shocked. There is a difference between gender if something happens and the parents pass away, a boy can live but a girl may be taken advantage of.

Key themes of inclusion for PWDDs, across all provinces were combined with concerns over reality versus the ideal concept of inclusion. Parents of PWDDs were blamed for negligence when letting their unaccompanied child(ren) with DDs out in

the community; this concern was due to the way PWDDs were abused by community members, particularly from adolescents. Again, type and severity of disability directed attitudes towards inclusion of PWDDs. As noted by a respondent in a northern rural area:

It varies (inclusion for PWDDs). A teacher tricked (student with DS) and told him to take a picture of them, the principal came, called the police and had him arrested. We spoke to the principal to explain that the child has DS. This cost the family \$10,000 bail. He is picked on a lot.

A professional in a north-eastern area stated:

The level of developmental or mental disability will have influence. You can approach someone with a mild type of disability softly but a person with a disability who may also be aggressive or violent.

As the discussions progressed, teacher's attitudes of inclusion became negative. Educator's attitudes towards PWDDs, in Irbid, appeared to be induced by past experiences. Teachers in rural areas mentioned educational opportunities for PWDDs were limited in traditional schools, specialized centers were either too costly for parents and/ or inaccessible. This barrier left teachers of non-specialized schools for PWDDs to feel burdened, as they may not be trained to educate PWDDs and/ or lack adequate resources to provide an inclusive academic environment. The following were their comments:

A respondent in a northern rural area stated:

I have a blind student, because she has no other choice. Another is a deaf student...the teacher can't turn around and focus on this specific child, abandoning other students. A (deaf) student won't be able to read the teachers lips, which means that child lost her right to an equal education. This type of service is not available in any schools, including governmental. The only time this service is available is through private schools, which focus on profit only.

A similar answer was provided by a respondent in a southern rural area stated:

People with CP don't go to school. But a child with MD or intellectual disability can go to school. If they are developmentally delayed, their parents won't educate them. How can they go to school? Most will stay home.

Another respondent in a southern rural area stated that *“teachers won't accept the student, they've literally rejected students with disabilities.”*

Discussion

Studies related to disability are fairly recent in Jordan; much of which has focused on educator and student attitudes towards persons with select disabilities. [Abu-HamourB and Al-Hmouz H, 2014] To our knowledge, this is the first study to incorporate a mixed-methods design, to examine the relationship between Jordanians social economic status and attitudes towards PWDDs: specifically, autism, blindness, CP, DS and muscular dystrophy. This mixed-method study allowed for a more thorough investigation to identify barriers to improving disability awareness initiatives and attitudes towards persons with developmental disabilities.

Multifaceted factors such as socio-economic status, culture, gender, age, stigma and interaction with PWDDs shape one's attitude towards PWDDs, daily. [Patka M, Keys CB, Henry DB, and McDonald KE, 2013; Hampton NZZhu and Y, 2011; Sheridan J, Scior K, 2013] In line with this, our findings show that Jordanians socio-economic status, such as income, influences attitudes towards PWDDs. This clearly contradicts Tarawneh [2016] findings regarding no association between attitudes towards PWDs and economic status. Moreover, we observed different attitudes based on specific developmental disabilities. It is likely that our findings were significant due to using a mixed-methods study, as well as examination of attitudes towards specific DDs versus general disabilities.

Our analysis of the CLAS-MR, shows that lower-income Jordanian households persistently held negative attitudes towards PWDDs. This finding is slightly similar to Abu-Hamour, Muhaidat [2014], as they found married women from middle-income households, with higher education backgrounds, were likely to have favoring attitudes towards education of adolescents diagnosed with autism, compared to respondents from other income levels. This raises concern, as negative attitudes towards PWDDs may contribute to reducing adequate educational and employment opportunities and increase discriminatory behaviors, poor quality of health or potential abuse [Embregts PJCM, Heestermans M, van den Bogaard KJHM, 2017], of persons with DDs, even more in lower-income households.

In contrast to the CLAS-MR, the IDLS indicates Jordanians generally express negative attitudes of social distance towards PWDDs regardless of income level, more so to specific developmental disabilities, MD and blindness. This may be due to the fact that the IDLS contains vignettes that are close to reality. In fact, it has been shown that attitudes are dependent on the type of disability. [Ghasemi et al., 2011] Similarly, it was found that attitudes projected towards persons with a specific type of disability are not uncommon. [Moore D and Nettelbeck T, 2013] Overall, our findings from the IDLS indicate persons diagnosed with any of the examined DD, are more likely to be isolated from social activities and socio-economic opportunities, in their respective communities.

To confirm our quantitative findings, we compared the focus-group findings to the CLAS and IDLS results. In addition to quantitative data collection, focus groups allow us to understand respondents knowledge of DD, in addition to why respondents hold positive or negative attitudes towards PWDDs. Responses from the focus-group interviews resonated the notion that general attitude towards PWDDs is influenced by respondents' monthly income levels and type of DD. Even more, respondents did favor interaction and acceptance of persons having disabilities that required less assistance or attention from respondents. Interestingly the qualitative analysis also revealed that in combination with income, factors such as respondents educational background and type of experience with someone diagnosed with a DD may influence ones' attitudes towards persons with developmental disabilities. It is imperative for professionals to conduct an in-depth assessment of the target populations socio-economic background and biases towards specific types of DD, prior to designing DD initiatives. These findings suggest that in addition to accounting for a target population's socio-economic status, one should consider a

holistic approach, which includes interaction with PWDDs, to improve attitudes towards PWDDs when designing DD awareness programs.

Worth noting, during the focus-group interview, respondents from Zarqa mentioned the term autism as fairly new to them. Many of the respondents across all provinces used the term "Mongoli," to describe persons diagnosed with DS; this term was used around the globe until it was replaced with "Down Syndrome" in 1965. [Tenenbaum, 2011] The use of such term, in 2016, illustrates the urgent need to incorporate a holistic approach, which includes improved educational delivery methods, behavior change initiatives to improve attitudes towards PWDDs. Interactive awareness initiatives which include persons with developmental disabilities as stakeholders and educators may also improve attitudes towards PWDDs.

The academic environment can become a useful platform for disability awareness, shaping adolescents attitude and behavior towards PWDDs; however, the factors related to negative attitude must be addressed. For instance, acting on existing policies, providing special education related professional development trainings, improving academic infrastructure and resources, will likely improve educator's attitudes towards students with developmental disabilities. Fortunately, there is a positive shift towards increasing knowledge of special needs students' disability, however, the information may be general, and teachers continue to lack full understanding of DD or how to address PWDDs health complications or behavioral concerns when presented in the classroom. [Alkhamra H et al., 2012] In part, our focus on educators is due to the responses obtained from educators. Attitudes of educators openly rejecting to educate students with DDs will cause a negative domino effect, as students' will in-turn hold negative attitudes towards persons with developmental disabilities.

Our respondents were diverse professional backgrounds, which includes professionals working in the healthcare, engineering, government and social service sectors. Although the academic environment is a foundation for knowledge, public health professionals must address attitudes towards PWDDs, at community levels. This calls for collaboration with- and educating of-community organizations and leaders, as well as healthcare and social service providers. Developmental disability awareness campaigns can have significant effects towards improving knowledge, perceptions, and attitudes towards PWDDs, at multiple levels; in-turn, this will improve the quality of life and well-being for many that are diagnosed with a developmental disability. Training healthcare [Tracy J and McDonald R, 2015] and social service providers about: disability, identifying the disabled's and caregivers needs, as well as implementing solutions, can improve the professional's attitudes towards persons with developmental disabilities. However, tailoring awareness initiatives based on a community's general socio-economic levels can further the effectiveness of disability awareness initiatives. Interactive awareness initiatives-which include persons with developmental disabilities as stakeholders and educators.

Strengths & Limitations

A mixed-methods design increased the credibility of information supplied by respondents. Multiple measures provided us

the ability to compare and contrast findings. Even more, the qualitative measure confirmed Jordanian attitudes towards persons with developmental disabilities. For instance, the modified CLAS-MR gave us a broad understanding of attitudes towards persons with developmental disabilities. However, the IDLS provided enlightenment towards understanding Jordanian attitudes towards persons with specific developmental disabilities.

This study is not without its limitations. Although 259 participants completed this study, the response rate may not be sufficient to generalize Jordanians attitude towards persons with developmental disabilities. For example, although we examined four provinces in Jordan, which gave us the ability to view the relationship between socio-economic status and attitudes towards PWDDs, of rural-vs-urban-vs-semi-rural, the findings may not be generalizable to Jordanians residing in other provinces, such as Aqaba, Wadi Rum or Bayir.

Conclusions

Currently, attitudes towards PWDDs are influenced by multiple factors, beyond income or professional background, such as environment, policies and cultural beliefs. Our mixed-methods study revealed attitudes towards PWDDs is dependent on type of developmental disability. Because disability research is limited in Jordan, we recommend public health professionals conduct an extensive disability-specific needs assessment, prior to implementing educational initiatives. Tailoring developmental disability initiatives can improve KPA towards PWDDs, as well as inclusion and quality of life for persons with developmental disabilities.

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