ORIGINAL ARTICLE



Development of an Incest Scale in the Turkish Language and Culture: Validity and Reliability Study

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Abstract

This study aims to develop a valid and reliable tool for measuring beliefs and attitudes regarding incest. Incest can be considered a widespread social problem. Despite the prevalence of incest, a tool that can measure knowledge of and attitudes toward incest in Turkey is still a necessity. In this study, 457 adults participated in the first and 255 adults in the second stage. To collect the data, Incest Scale, Childhood Emotional Incest Scale and demographic form were used. Exploratory/ Confirmatory factor analysis, parallel analysis, reliability analysis were performed, and criterion validity was tested. A 23-item and 5-factor scale was obtained. The fit indexes obtained as a result of confirmatory factor analysis were satisfactory. Positive significant correlations were found between incest and childhood emotional incest. The reliability coefficients were found to be within acceptable limits. This study is expected to fill a significant gap in the field, promote awareness regarding incest, and make an important contribution to the field to combat incest effectively.

Keywords Incest · Validity · Reliability · Abuse · Sexual · Sexual abuse

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Introduction

Sexual abuse is an unlawful act of including a person in a sexual activity even though they neither are physically and psychologically mature enough due to their age, nor consent to the activity in question. It also includes being exposed to a sexual act that is socially defined as a taboo (WHO [World Health Organization], 2006). Soner and Aykut (2017) define sexual abuse as an adult's use of a child to satisfy their sexual pleasure, and define incest as sexual abuse within the family.

Incest, the most devastating form of sexual abuse, is also known as domestic sexual abuse. The word incest, which originates from Latin, means "to stain", "to pollute" and is derived from the word "incestus", which is a combination of the word "in", a negative prefix, and the word "caste", meaning purity (Polat, 2006). Incest, which is defined in many ways, is the equivalent of the word "fücur" in Arabic which means sin and adultery (Polat, 2007). In Turkish language there is not a word equivalent to incest which is directly adopted as "ensest" and is defined as a "forbidden relationship within the family" (TDK (Turkish Language Institution), 2018).

Bozbeyoğlu et al. (2010, p. 5–6) have defined incest by taking into account the social, legal and religious rules in Turkey. Accepted criteria of harassment for incest includes any physical or non-physical behavior directed at a child or a young person for the sexual arousal or gratification of the abuser. Although there are various definitions of incest, it is defined as the sexual abuse of the child by individuals in the family who are responsible for taking care of the child, who act as a parental fure and have parental authority, and with whom the child is in a trusting relationship. In other words, the main criterion for the identity of the abuser is not blood ties. In addition to relatives (i.e., grandfather, uncle, aunt, cousin, sibling, parents, etc.) with whom the child is related by blood, any parental figure hierarchically above the child, a respected group of relatives, or a distant relative are also considered among the abusers within the definition of incest (Cooper & Cormier, 1982).

Furthermore, incest can transmit from one generation to the next in many ways. In some examples, the mother of a father-daughter incest family has previous experiences of incest with her father. These women are powerless to stop the incestuous relationship between their husbands and daughters because of a history of unresolved incest with their fathers. Another pattern involves circumstances where the father had already experienced father-son incest when he was a young man (Cooper & Cormier, 1982). From the information given above and the findings of the studies, it can be stated that previous experiences of the incest perpetrator or the maternal/paternal figures who remain silent in incest play an important role in their reactions to this process. It is seen that incest is learned or legitimized in a "wrong" way.

There are plenty of statistics about child abuse, but not many about incest. In 1984, one of the most well-known studies on incest was conducted. Even though this was done a long time ago, the data is still relevant because it was one of the most thorough studies ever conducted. According to the study, only 20% of sexual abuse (10% of them are incestuous) cases involving female children are reported, despite estimates of between 60.000 and 10.000 cases (Barry, 1984 cited in Roerig & Odell, 2022, p. 4), and this translates to one in five girls and one in twenty boys (Davis, 2022 cited in Roerig & Odell, 2022, p. 4).



Although incest statistics for Turkey cannot be reached, there have been many qualitative studies on incest. For instance, in a study (Aydin et al., 2015) conducted with 1002 cases of child sexual abuse, it was seen that 10.2% of these cases were incest, and in another study by Bilginer et al. (2013), incest rate among all child sexual abuse cases was 14.4%. The youngest victim reported is a baby who was abused by her father when she was 8 months old, by touching and rubbing her genitals with his fingers (Bozbeyoglu et al., 2010). Yuksel Kaptanoglu et al. (2015) have reported that in 40% of the cases of child sexual abuse, perpetrators were male. Sezgin (1993) has stated that 57% of incest perpetrators are fathers; 26% are distant relatives, and 13% are close relatives. Yilmaz and Yilmaz (2016) evaluated the cases that applied to a university hospital from a sociodemographic point of view to understand the incest incidents. Of the 39 incest survivors, 38 were female and 1 was male. These cases were examined in terms of their education levels. Since 10 of them were younger than 7 years old, they had not started school yet. It was observed that 2 of them were not sent to school despite their age, and 6 of them did not continue school after primary education. These data indicate that children who do not enter or remain in the formal education system could be protected from abuse by making appropriate educational planning.

As mentioned above, it is very difficult to reach the data of incest, only 15% of which are reported to judicial institutions (İseri, 2008). For this reason, WHO has called the incest problem, which can continue for years and remains mostly hidden, as a "silent health emergency" (WHO, 2020). It is also considered to be a type of violence that has the most severe physical, mental and social consequences on the child and has a lifelong negative effect (Turkish Incest Atlas Project, 2014). The fact that incest cases remain hidden for a long time or even not become public at all depends on many reasons. Considering that the incest perpetrator is a trusted relative of the child, and the incident usually takes place in the child's home where the child is expected to feel safe - even in their own bed – it is usually difficult for the victim to express the abuse. To get out of this circle, the victim needs other relationships or environments in which they will feel safe. Moreover, there are many reasons (e.g., normalizing the situation, seeing themselves as the culprit, pressure and threat of the abuser, the authority of the abuser and the way the children are brought up) why the victim cannot express incest (Bozbeyoglu et al., 2010).

The Antecedents of Incest

Idrisoglu (2019) stated that incest is not related to family structure, further explaining that even though experts report cases of incests observed in all kinds of families, there are still some factors increasing its likelihood. Father's alcohol addiction, violent behavior within the family, and financial collapse are among the factors reported to increase the likelihood of incest. It is noteworthy that individuals who are victims of incest are mostly isolated (see the case of incest in Austria [the case of Josef Fritzl]) which means that the family has extremely limited contact with neighbors, relatives or friends. Similarly, Bozbeyoglu et al. (2010) report that some incestuous families were extremely introverted. After the meeting with the prosecutor within the scope of the study by Bozbeyoglu et al. (2010, p. 12), the following was recorded:



"...The family was somehow isolated, did not mix with other people, as if they had problems with the village. This family was like an island in the middle of the sea...".

Saygili and Gönenli (2008) report that individuals with mental retardation are 4 to 10 times more likely to be exposed to sexual abuse than normal individuals, and unlike other studies, these authors have included "multiple incest" in their research. In this case, after security forces got involved, it was understood that the boy in the family was forced to have sexual intercourse with his mother and sister, who was mentally retarded, against her will, and at the same time, the father forced his daughter to have sexual intercourse with himself. Therefore, multiple incestuous relations can take place within the family.

In the last part of the book titled "Giving Birth to Your Sister: The Reality of Incest in Turkey", which was written by Sanay (2018), a journalist in Turkey, the results of the survey conducted with university students (N=2023) were included. According to this survey, participants think that incest is mostly associated with mental and sexual problems (86.5%). These are followed by family structure (31.2%) and religion (16.5%). Kursun (2021) concludes that incest cases are more common in rural areas, and in some cases, the emergence of abuse is delayed and the likelihood of recurrence of abuse is high. In addition, it was found that fathers are more likely to be perpetrators compared to other family members.

Furthermore, factors such as becoming a parent at an early age, insufficient knowledge about raising children, and indifference to children's wellbeing also affect domestic abuse (Kara et al., 2004). Moreover, failure of family members to fulfill their roles and responsibilities, and the lack of a clear distribution of duties in the family can make children prone to sexual abuse (Egan et al., 1999).

Incest can occur in any family, regardless of background. Nonetheless, in a low-income household with a single room, the parents had to sleep in the same room as the kids, and they planned their sex between visits from other family members. This kind of scenario makes the lustful father vulnerable to sexual temptation while watching his sleeping daughter (Abror et al., 2020). According to Abror et al. (2020), the following are contributing factors to incest: (a) lack of opportunities and a regular partner for appropriate sexual relations; (b) keeping the incest relationship a secret from those outside the household; (c) applying moral principles within the family; (d) an overly familiar feeling amongst close relatives; (f) isolating the family from the outside world; (g) defending the family's nobility, and (h) poverty and cultural conflicts.

The Consequences of Incest

Incest has negative impacts, either physical, psychological, or social. Most of the women who experienced assault in incest were too terrified to say no when their fathers, uncles, grandfathers, and sons forced them to have sex. The fact that the victims of incest find it embarrassing to be in the public eye makes it harder for them to escape this violence. Because of this, a large number of incest victims experienced severe trauma throughout their entire lives and suffered from mental breakdowns (Abror et al., 2020). Similarly, Beschornerová (2022) stated that incestuous behavior



has three categories of consequences, namely, relational imbalance, heightened risk of intergenerational incest, and traumatic neurosis.

Although child sexual abuse seldom results in death, the effects on the victim can be severe and may last far into adulthood (Johnson, 2004). With sexual abuse, the victim is negatively affected, and the damage is especially significant in incest cases (Soner & Aykut, 2017). It has been observed by Kursun (2021) that incest has more depressive effects on the victim than other types of sexual abuse. Incest affects the individual physically, mentally and socially, and victims of incest may deny the abuse they experience due to its potential social consequences (Sahin & Tasar, 2012).

The incest victims may be overly curious about or completely uninterested towards sexuality due to the events they have experienced in the later stages of their lives. They may experience problems in their educational lives as well as in socializing and communicating with people. The biggest problem experienced by the victims of incest is the problem of trust. Furthermore, they are more prone to suicide than other individuals. Post-traumatic stress disorder (PTSD) is among the most common psychological disorders for victims of incest, which may also lead to dissociative disorders (Soner & Aykut, 2017). Similarly, Yildirim et al. (2014) stated that incest can cause psychological problems (i.e., personality disorder, suicidal ideation, dissociative disorders, PTSD, sexually oriented behavior, depression, and anxiety disorders). Additionally, the attitudes and behaviors of the family toward the incest victim affect the psychological well-being of the individual (Îdrisoglu, 2019). Moreover, Rudd and Herzberger (1999, p. 923) reported the consequences of incest as follows: depression, drug or alcohol problems, eating disorders, suicidal feelings, sexual promiscuity, compulsive spending, nightmares, flashbacks and lack of memory.

It can be stated that incest affects individuals more than other types of sexual abuse. In addition, the negative consequences of the incestuous experience can affect the individual throughout their lives and cause them to develop a distrusting attitude towards other people.

Theoretical Basis

Social Learning Theory (Bandura, 1962) argues that human behaviors are learned through observation, that individuals imitate behaviors in their environment, and model them. One of the contexts where social learning is most effective is the family. Children learn their first experiences from the family and can learn and imitate the behaviors of their parents or other family members. Incest learned in the family context echoes in other relationships, and individuals who were exposed to incest in their childhood learn this and apply it to their children (Kara et al., 2004). Children who are the objects of abuse become the subject of abuse when they become parents themselves. When viewed within the framework of this theory, it is thought that if parents cannot fulfill their roles in the family, if one of the parents remains passive or has role confusion, children who take them as a model will be inadequate in saying no or protecting themselves when they are abused (Bratton, 1999).



Purpose and Importance of the Research

Incest is one of the least known and covered up social problems in many countries, including Turkey. Since sexual abuse is experienced within the family, and is prohibited, and deemed unacceptable, it is more difficult to reveal incestuous relationships both in developed and underdeveloped societies, compared to other types of abuse. The fact that this abuse is experienced within the family and the victims are exposed to incestuous experiences by the people in their close circles, to whom they trust, makes the abuse more devastating. In other words, incest is carried out by the family or close relatives people trust most in their lives, and this affects their lives in all aspects, deeply hurting them psychologically and socially. Incest causes religious, moral, and social reactions against the perpetrator and the victim. Since these reactions prevent the incest cases from being reported, it is thought that incest cases are rare although the truth is on the contrary. Therefore, studies on incest are scarce. Although research has shown that incest has negative long-term effects (i.e., psychological problems [Kursun, 2021; Yildirim et al., 2014]), the absence of reliable, valid, and standardized assessment instruments has made it difficult to measure and manage it.

As a result of the literature review, two measurement tools aiming to measure incest were reached. One was developed by Ciccone in 1982 and the other is the scale of Edwards and Donaldson (1989). Ciccone (1982) developed a scale to measure attitudes towards incest which consists of 5 factors, namely, definition, beliefs, fantasy, dynamics, and effects. An individual's Definition of incest, including what behaviors they consider to be incestuous behavior and the identities of those involved in an incestuous relationship, does not correlate with their beliefs about incest, whether they view incestuous reports as fiction or reality, how they conceptualize the dynamics of incest, or whether they think that incest has harmful effects. The Beliefs scale focuses more on an individual's cognitive understanding of incestual elements; answers to these items indicate whether an individual's beliefs about incest are founded in myth and stereotype rather than in a position of being "more informed" in light of the information that is currently available. According to psychodynamic theory, the Fantasy scale measures one's attitude toward incest reports as oedipal materials versus accepting the reports as factual accounts of actual events. The dynamics scale represents the perspective of examining incest dynamics from the perspective of an individual as opposed to a systems (family) approach to pathology. The Effects scale rates an individual's perception of the effects of incest on a spectrum that runs from beneficial or even nonharmful to harmful.

The Childhood Incest Response Questionnaire is a self-report tool that evaluates a variety of frequently reported symptoms experienced by adults who are victims of incest. Edwards and Donaldson (1989) investigated the validity and reliability of this tool. Seven factors (i.e., vulnerability and isolation, fear and anxiety, guilt and shame, anger and betrayal, reaction to the abuser, sadness and loss, and powerlessness) that corresponded to the stress response themes that survivors of traumatic events were thought to experience were revealed through analysis.

A comprehensive literature review shows that a valid and reliable tool to measure beliefs and attitudes towards incest in Turkey is unavailable. The above given scales



(i.e., Ciccone, 1982; Edwards, & Donaldson, 1989) were developed approximately forty years ago. Ciccone (1982) developed a scale to measure attitudes towards incest, and Edwards and Donaldson (1989) developed a scale to measure symptoms experienced by adults who are victims of incest. Our scale is unique since it was developed specifically for Turkish culture and measures belief and attitudes regarding incest.

According to Maslow's (1943) hierarchy of needs, although sexual needs are among the basic physiological needs in the first step, even talking about healthy sexual relations, in general, is a taboo in Turkey. Incest remains hidden both because it is an unacceptable type of sexual intercourse and because talking about sexual needs is taboo. There are a limited number of studies about sexual abuse (especially incest) in Turkey. For this reason, it is difficult to obtain clear information about incest cases. It is thought that the most important reason why incest cases are hidden is that the family sees incest as something to be ashamed of. However, the fact that the problem is experienced within the family makes it more difficult for the child and their relatives who want to support them to speak up in family-centered and closed societies. In addition, in family-centered societies including Turkey, revealment of incest is seen as a damage to family integrity, and this situation can prevent both the disclosure of incest and the rehabilitation of the child victim after it is revealed (Bozbeyoglu et al., 2010). Therefore, it is thought that this study will make an important contribution to the field in terms of bringing this important issue to the agenda. Since incest hurts the individual mentally and physically, it is important to raise awareness and contribute to the literature. In this way, it has been possible to examine incest as a separate category from other types of sexual abuses.

Furthermore, considering that number of studies investigating incest cases are extremely limited and that most of these studies are qualitative, this study stands out in terms of both its topic and design. It is aimed to measure beliefs and attitudes regarding incest in a valid and reliable, and a quantitative way. It is necessary to quantitatively measure the case of incest because a fact that cannot be measured cannot be understood either. This raises the critical question of how incest is understood and interpreted in a Turkish context. The rationale for this research is to develop a reliable and valid psychometric measure of incest and to examine the relationship between the incest scale and the childhood emotional incest scale. A scale like this may come in useful in the future for research aimed at raising awareness and understanding of this complicated phenomenon. Psychologists and therapists can modify their therapeutic intervention by accurately identifying the origins of a presenting problem with the aid of an incest scale. This study is expected to raise awareness as a part of the fight against incest.

Field workers, academicians, and other researchers who want to investigate incest from different aspects can use this scale. Measuring the beliefs and attitudes towards incest should help professionals collect more information about incest. It is important to raise awareness about incest among society because many victims of incest think that the situation they are exposed to is "normal". For example, after an extensive literature review and personal interviews with field workers (e.g., social worker, expert in child development, psychologist), they described similar events as follows. The father abuses both of his daughters. Girls think the way their fathers approach them is normal in the father-daughter relationship. When the father goes to one of her daugh-



ter's rooms one night, the other daughter gets jealous over it. In short, it is seen that the daughters have normalized their father's behavior.

Methods

Data were collected in two different stages. Information is given below for each stage.

First Stage

Participants

The population consists of individuals aged 18 years and older living in Turkey. The sample was determined by convenience and snowball sampling methods. Data were collected from 474 individuals. As a result of the outlier's analysis, 17 individuals were not included in the study. The sample consists of 457 individuals $(n_{men} = 110)$ and $n_{\text{women}} = 347$), the age range of the participants was 18–66, with a mean age of 24.86 and an age-related standard deviation of 7.50. Education level of the 4.6% (n=21) of the participants was secondary school and below; 36.3% (n=166) of them were high school graduates; 9% (n=41) of them have associate; 44% (n=201) of them had undergraduate and 6.2% (n=28) of them had graduate degrees. Most of the participants were single (81.8%, n=374) and 15.3% (n=70) of them were married. The percentage of participants who choose the "other" option for marital status was 2.8% (n=13). In terms of the settlement, the majority of the participants lived in the province (42.5%, n=194). This was followed by the metropolitan (29.1%, n=133) and the district (20.6%, n=20.6). The rate of people living in towns and villages was 7.9% (n=36). Individuals from different professions (such as lawyers, physicians, teachers, students, and civil servants) participated in the research.

Measures

Incest Scale. The scale items were developed by the researchers. There were 90 items in the item pool. A 5-point Likert-type scale ranging from 1-strongly disagree to 5-strongly agree was used to evaluate the scale.

Demographic Information Form. This form was developed by the researchers. Participants were asked about their gender, education level, age, place of residence, marital status, and occupation.

Data Analysis and Procedure

After a comprehensive literature review, researchers individually wrote scale items related to incest and then worked together on these items. At this stage, a group of university students was asked to write their thoughts on incest. After the literature review and the students' ideas, a pool of 106 items was created. Items that were similar to each other or that were difficult to understand were excluded. The item pool



was evaluated by 9 field experts, including 4 academicians (Psychology, Psychological Counseling, and Preschool Education), 3 psychologists, and 2 non-governmental organization workers. Field experts were asked to evaluate the items in the item pool by choosing one of the options (Appropriate, Partially Appropriate, or Not Appropriate). In addition, a section where they can write specific feedback for each item was also provided. In line with the suggestions received from field experts, some items were edited, and some were removed from the pool. The 90-item pool obtained after removing 16 items was sent to 4 Turkish language experts, and these experts were asked to evaluate the scale items in terms of Turkish grammar and comprehensiveness. Based on their feedback, necessary modifications were made, and the item pool was finalized for data collection.

Before proceeding to the data collection phase, necessary permissions were obtained from the Social Sciences Ethics Committee of the university (62,182–03.08.2021- E-60263016-050.06.04-62182). Due to the outbreak of COVID-19, data were collected via the internet. The survey was made with Google Forms. Social media sites like Instagram, X (Twitter), and WhatsApp were used to gather data. The researchers sent the survey link to everyone in their network and asked their networks to share it with others in their extended networks. An informed consent form was offered to all participants, and in this form, information such as the purpose and duration of the study, anonymity, withdrawal from the study, and the analysis process were explained. In this study, it was stated in the informed consent form that to protect the participants or support those who were triggered could contact the researchers. Since incest is a very sensitive issue and it is thought that participants may be triggered, researchers have approached this issue with sensitivity. No information was requested from the participants that would reveal their identity. Participation in the study was on a completely voluntary basis.

Using SPSS25, exploratory factor analysis and reliability analysis were carried out in the first stage following data collection. Eigenvalues in EFA were used to determine the factor structure. Some of the items were grouped under multiple factors as a result of this analysis. In order to derive factors and facilitate interpretation, the Varimax rotation technique was applied. For determining factor structures, parallel analysis was also performed.

Second Stage

Participants

The population consists of individuals aged 18 years and older, living in Turkey. The sample was determined by convenience and snowball sampling method. Data were collected from 263 participants. As a result of the outlier's analysis, 8 participants were not included in the study. Of the 254 participants, 69 (27.1%) were men and 185 (72.5%) were women. One participant stated their gender as "other". The age range of participants was 18-59, with a mean age of 23.07 and an age-related standard deviation of 5.90. As for their educational status, 2.4% (n=6) were secondary school and below; 41.6% (n=106) were high school graduates; 5.9% (n=15) of them have



associate; 35.7% (n=91) had undergraduate and 4.7% (n=12) had graduate degrees. Twenty-five (9.8%) participants stated their educational status as "other". 85.5% (n=218) of the participants were single; 11% (n=28) were married. The percentage of participants who chose the "Other" option for marital status was 3.5% (n=9). In terms of settlement, the majority of the participants lived in the district (31.4%, n=80) and the province (31%, n=79). This was followed by a metropolitan city (27.8%, n=71). The rate of people living in towns and villages was 9.8% (n=25). Participants from different professions, such as psychologists, physicians, teachers, students, participated voluntarily in this research.

Measures

Incest Scale. This scale was developed by researchers to measure beliefs and attitudes regarding incest. It consists of 23 items and 5 factors (attitude towards the victim-6 items- α =0.89, prevalence of incest-4 items- α =0.79, consequences of incest-4 items- α =0.85, judgment against the perpetrator-5 items- α =0.84 and prevention of incest-4 items- α =0.76). Sample items can be listed as follows: "Incest is common in patriarchal societies.", "Incest is common in rural areas." and "Incest is common in low-income families." A 5-point Likert-type scale ranging from 1-strongly disagree to 5- strongly agree was used. The total score of the scale cannot be obtained. Scores can be obtained based on the factors. A high score on attitude towards the victim shows high level of negative emotions, thoughts and behaviors experienced by the incest victim; a high score on prevalence of incest shows high levels of knowledge about incest in different contexts; a high score on consequences of incest shows high levels of knowledge about the consequences of incest; a high score on judgment against the perpetrator shows the negative attitudes towards perpetrator, and prevention of incest shows high sensitivity to issues that reduce incest.

Childhood Emotional Incest Scale (CEIS). This scale was developed by Cimsir and Akdogan (2021) to measure emotional incest. It consists of 12 items and 2 factors (surrogate spouse-6 items- α =0.87 and unsatisfactory childhood-6 items- α =0.88). Cronbach's alpha for 12 items is reported as 0.91 by Cimsir and Akdogan (2021). Sample items can be listed as follows: "I had to act more maturely than one (or both) of my parents when there was a problem.", "I had to intervene for one of my parents to be able to resolve his/her problems with my other parent." and "One of my parents shared her/his emotional problems with me instead of my other parent or other adults". A 5-point Likert-type scale ranging from 1-never to 5- always was used. A high total score of the scale indicates a high level of emotional incest. A high surrogate spouse factor score appears to emphasize the fact that parents are either so emotionally distant or dysfunctional that the child feels compelled to behave more like a spouse to the emotionally incestuous parent in an effort to meet the parent's needs in terms of relationships or emotions. A high score for the unsatisfactory childhood factor appears to draw attention to the needs that are disregarded when a child is a part of an emotionally abusive relationship (Cimsir & Akdogan (2021, p.107). In this study, a Cronbach's alpha of 0.93 was reported for 12 items; 0.86 for surrogate spouse and 0.90 for unsatisfactory childhood.

Demographic Information Form. This form is the same as used in the first stage.



Data Analysis and Procedure

The procedure was similar to the first stage. In this second stage, Confirmatory Factor Analysis (using AMOS), correlation analysis (for criterion validity), and reliability analysis using SPSS25 were conducted. The authors have taken every precaution to prevent inflating statistically significant results, and they accept responsibility for the accuracy of the data analyses and the integrity of the data.

Results

Two samples were used in the validity and reliability analysis. As a result of the EFA, a 23-item 5-factor scale was obtained (see Table 1). EFA indicated good sampling adequacy and strong relationships between the items; the KMO value was 0.826; Bartlett's sphericity test value was X=3703.198, p<.05. According to Leech et al. (2005), KMO values can be interpreted as follows: 0.50-0.60 "bad"; 0.60-0.70 "weak"; 0.70-0.80 "good" and above 0.90 "excellent". Therefore, it can be stated that the obtained KMO value (0.826) was between "good" and "excellent". To perform factor analysis, Bartlett's Test of Sphericity should be significant. As a result of Bartlett's test of sphericity, it is seen that factor analysis can be applied to the data.

Comrey and Lee (1992) suggest that the factor loadings can be evaluated as follows: ".32 – .44" poor; ".45 – .54" medium; ".55 – .62" good; ".63 – .70" very good; ".71 and above" excellent. Factor loadings for the attitudes towards the victim were between 0.640 and 0.853; consequences of incest were between 0.705 and 0.826; judgment against the perpetrator were between 0.545 and 0.837; prevalence of incest were between 0.671 and 0.798 and lastly, prevention of incest were between 0.606 and 0.812. Accordingly, it can be stated that the obtained factor loadings vary between "good" and "excellent".

The explained variance was 58.67%. The variance explained in a scale development study should be between 40% and 60% (Scherer et al., 1988). According to this criterion, the explained variance in this study was at a sufficient level.

Buyukozturk (2007) proposes that the item-total correlation value should be greater than 0.30. In this study, the item-total correlation for the *attitudes towards* the victim was between 0.60 and 0.80; consequences of incest was between 0.39 and 0.69; judgment against the perpetrator was between 0.52 and 0.74; prevalence of incest was between 0.56 and 0.66; prevention of incest was between 0.39 and 0.69. Thus, it can be stated that these item-total correlation values are sufficient.

George and Mallery (2010) state that reliability coefficients above 0.70 are acceptable. Cronbach's alpha values obtained for these factors (0.89; 0.79; 0.85; 0.84; 0.76 respectively) are found to be at an acceptable level.

As shown in Table 2, Monte Carlo parallel analysis for factor extraction was performed. According to the findings, the scale comprises five factors. The value of raw data should be greater than the percentile, according to the basic rule for calculating the number of factors (O'Connor, 2000).

Scree plot is given in Figure 1.

Scree plot shows five breakpoints which means five factors.



Items	M	S	Item-Total Correlation	Cronbach α if item deleted	F1*	F2	F3	F4	F5
1.Ensest mağduru, kendini hiçbir yerde güvende hissetmez. [^Incest victims do not feel safe anywhere.]	3.37	1.06	0.308	0.820	0.748				
2.Ensest mağduru yalnız kaldığında ensest failinin her an geleceği endişesini hisseder. [When the victim of incest is alone, he or she feels anxious that the perpetrator could come at any moment.]	3.20	1.13	0.298	0.821	0.796				
3.Ensest mağdurunun kaygı düzeyi yüksek- tir. [The incest victim has a high level of anxiety.]	2.81	1.09	0.283	0.822	0.640				
4.Ensest mağduru, her anını korku içerisinde geçirir. [Incest victims spend every moment in fear.]	3.15	0.99	0.277	0.821	0.853				
5.Ensest mağduru, kendine zarar verir. [Victims of incest harm themselves.]	3.96	1.00	0.266	0.822	0.695				
6.Ensest mağduru, kendini değersiz hisseder. [Victims of incest feels worthless.]	4.38	0.78	0.312	0.819	0.717				
7.Ensest aile içi şiddet ile sonuçlanabilir. [Incest can result in domestic violence.]	4.04	1.02	0.373	0.817		0.723			
8.Ensest sonucu istenmeyen gebelik yaşanabilir. [Unwanted pregnancy may occur as a result of incest.]	4.14	0.87	0.392	0.816		0.705			
9.Ensest kan davalarıyla sonuçla- nabilir. [<i>Incest can</i> <i>result in feuds</i> .]	4.13	0.82	0.356	0.817		0.826			
10.Ensest namus cinayetine yol açabilir. [Incest can lead to honor killings.]	4.40	0.60	0.436	0.816		0.818			



Table 1 (continued)									
Items	M	S	Item-Total Correlation	Cronbach α if item deleted	F1*	F2	F3	F4	F5
11.Ensest faili ile aynı ortamda bulunmak istemem. [I would not want to be in the same place with the perpetrator of incest.]	4.06	0.86	0.402	0.815			0.545		
12.Ensest failine kaba davranırım. [I would be rude to the perpetrator of incest.]	4.17	0.76	0.449	0.814			0.785		
13.Ensest faili toplumdan dışlanmalıdır. [The perpetrator of incest should be excluded from society.]	4.58	0.70	0.332	0.818			0.837		
14.Ensest failinin ahlâki duyguları zayıftır. [The perpetra- tor of incest has weak moral feelings.]	3.69	1.06	0.325	0.819			0.725		
15.Ensest faili mağdura zarar vermeyi amaçlar. [The perpe- trator of incest aims to harm the victim.]	3.65	1.17	0.283	0.822			0.568		
16.Ensest ataerkil toplumlarda yaygındır. [Incest is common in patriarchal societies.]	4.35	0.82	0.401	0.815				0.671	
17.Ensest kırsal kesimlerde yaygındır. [Incest is common in rural areas.]	3.98	0.96	0.414	0.815				0.798	
18.Ensest gelir düzeyi düşük ailelerde yaygındır. [Incest is common in low- income families.]	3.71	0.94	0.410	0.815				0.790	
19.Ensest geniş ailelerde yaygındır. [<i>Incest is common in extended families</i> .]	4.07	0.75	0.552	0.810				0.736	
20. Ailelere cinsel sağlık eğitiminin verilmesi ensesti azaltır. [Educating families on sexual health would reduce the incidences of incest.]	4.33	0.61	0.531	0.813					0.645



Table 1 (continued)									
Items	M	S	Item-Total Correlation	Cronbach α if item deleted	F1*	F2	F3	F4	F5
21.Çocukların beden dokunulmazlığı konusunda bilgilendirilmesi ensesti azaltır. [Informing children about body immunity would reduce the incidences of incest.]	3.83	0.90	0.512	0.810					0.800
22.Her eğitim sevi- yesindeki müfredatlara ensest konusunun eklenmesi gerekir. [Incest should be included in the cur- ricula at all levels of education]	3.60	0.80	0.455	0.813					0.606
23.Toplumun ensest konusunda bilin- çlendirilmesi ensesti azaltır. [Raising public awareness about in- cest reduces incest.]	3.94	0.81	0.524	0.811					0.812
Eigenvalues					5.33	2.72	1.91	1.79	1.75
M					3.91	4.19	4.05	3.13	4.13
S					0.62	0.61	0.69	0.81	0.67
Cronbach Alpha					0.86	0.80	0.76	0.76	0.71
Explained Variance					%58.e	57			

Notes *The naming of the factors are as follows: F1-attitudes towards the victim; F2-consequences of incest; F3-judgment against the perpetrator; F4-prevalence of incest; F5-prevention of incest ^The English validation and reliability of the scale are not performed. Only the English equivalents of the items were written

Table 2 Monte carlo parallel analysis

Root	Raw Data	Means	Percentile			
1	5.33	1.43	1.49			
2	2.72	1.36	1.40			
3	1.91	1.30	1.34			
4	1.79	1.26	1.30			
5	1.75	1.22	1.25			
6	0.87	1.18	1.21			
7	0.86	1.14	1.18			

The CFA was examined to see if the component structure indicated a suitable correspondence between the expected model and the observed data. The maximum likelihood method was used to test the five-component structure of the Incest Scale, which was suggested by the principal factor analysis. Table 3 demonstrates that all fit indexes were within acceptable bounds.



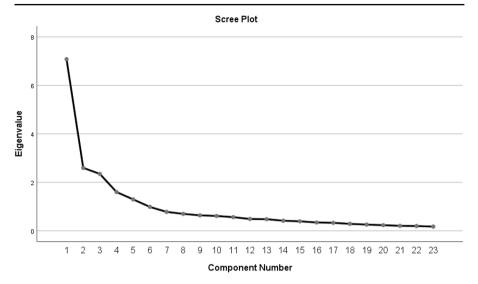


Fig. 1 Scree plot

Table 3 Confirmatory factor analysis findings

Models	Modification	CMIN/df	IFI	CFI	RMSEA
1.model	0	2.574	0.879	0.877	0.079
2.model	1	2.434	0.890	0.889	0.075
3.model	2	2.162	0.911	0.910	0.068
Acceptable	-	< 5	>0.900	>0.900	< 0.08
range*					

^{*} Tabachnick & Fidell, 2001

A value of CMIN/df less than 3 indicates a good fit (Byrne, 2010). The CMIN/df value was determined as 2.162. According to Increasing Fit Index (IFI), values greater than 0.900 indicate an acceptable fit (Schermelleh – Engel et al., 2003). IFI was calculated to be 0.911. With Comparative Fit Index (CFI), the fit function of the model is compared with another model (Kline, 2011). CFI is expected to take a value between 0 and 1. According to Tabachnick and Fidell (2001), a value higher than 900 indicates a good fit. CFI value for this study was 0.910. Root Mean Square Error of Approximation (RMSEA) is used to predict population covariances, and takes a value between 0 and 1. A value of 0 indicates a perfect fit (Brown, 2006). A RMSEA value less than 0.08 indicates acceptable goodness of fit (Thompson, 2004). In this study, the RMSEA value was reported as 0.068.

Significant correlations were found between Incest Scale and Emotional Incest in Childhood Scale (see Table 4).

As shown in Table 4, there are statistically significant relationships between the factors of incest and childhood emotional incest scale.



Table 4 Relationships between incest scale and childhood emotional incest scale										
Variables	N	M	S	1	2	3	4	5	6	7
1.Surrogate spouse	255	2.31	0.86	1	0.76*	0.26*	-0.01	0.08	0.14*	0.14*
2.Unsatisfactory childhood	255	2.22	1.04		1	0.22^{*}	-0.04	0.05	0.11	0.08
3.Prevalence of incest	255	3.10	0.84			1	0.14^{*}	0.13^{*}	0.08	0.18^{*}
4.Prevention of incest	255	4.17	0.69				1	0.80^*	0.20^{*}	0.43^{*}
5.Concequences of incest	255	4.15	0.63					1	0.31^{*}	0.49^{*}
6.Judgment against the perpetrator	255	3.91	0.79						1	0.55^{*}
7. Attitudes towards the victim	255	4.06	0.65							1

Table 4 Relationships between incest scale and childhood emotional incest scale

Discussion and Conclusion

This study aimed to develop a valid and reliable scale that can measure the beliefs and attitudes toward incest, which is invisible despite its prevalence, and which can be considered a significant social problem. Overall, the results supported the validity and reliability of the Incest Scale as a measure of beliefs and attitudes towards incest for the Turkish sample groups used in this study. Furthermore, a significant correlation with the established measure of Childhood Emotional Incest was also obtained.

As a result of this study, a 23-item 5-factor tool was obtained to measure the concept of incest validly and reliably. Fit indexes obtained by CFA indicate an appropriate match between the model expected and the data observed (Brown, 2006; Byrne, 2010; Kline, 2011; Schermelleh – Engel et al., 2003; Tabachnick, & Fidell, 2001; Thompson, 2004). Criterion validity explains whether a construct is related to other constructs with which it is theoretically associated (DeVellis, 2012). In this context, the relationships between the Incest Scale and the Childhood Emotional Incest Scale were examined. Accordingly, statistically significant relationships were found between these two scales. In this case, it can be stated that our scale has criterion validity.

The results given above indicate that validity and reliability values of the Incest Scale are within acceptable limits. This study is pioneering in terms of developing a scale that can quantitatively measure the concept of incest at the present time. Data were collected from individuals in different age groups, which is an important point that should be emphasized in terms of giving a general impression and psychometric properties of the scale. Therefore, it can be stated that the study is expected to make an important contribution to the field and fill an existing gap. However, this field of research is still in need of more studies. The validity, reliability, and factor structure of Incest Scale should further be tested with different sample groups.

A limitation of this study was being carried out in the period of the COVID-19 outbreak. Data were collected online, and this is a limitation because individuals may be unfamiliar with the definition of "incest". As a precaution, the concept of incest was defined under the informed consent form, but whether the participants have read this definition is not certain. Another limitation was related to the sampling method: Study was conducted only with the participants, researchers were able to reach. Large-scale studies conducted with participants selected by stratified sampling method throughout Turkey should provide more information about the validity and



^{*}p<.05; * EIE: Childhood Emotional Incest; **: IS: Incest Scale

reliability of the scale. Another problem frequently encountered when using scales is that participants are likely to be affected by concerns of social desirability as they answer the questions. This could affect the responses of the participants. It is possible that the participants did not honestly respond or interpreted the items differently, which could have significant effects on the findings.

In order for incest victims to realize that they have full support from their surroundings to obtain justice and find solutions to their issues, the government is strongly advised to construct a professional institution that provides counseling services, including hearing their complaints, speaking up for them, and offering solutions (Abror et al., 2020). Most people concur that more needs to be done to educate professionals and make them conscious of how their attitudes can impact the standard of care given to individuals in incestuous relationships (Ciccone, 1982).

Notwithstanding these drawbacks, the current study has implications for both practice and theory. The study offered a valid and reliable tool. It is thought that this scale will contribute to researchers who want to conduct scientific studies on incest, as well as to mental health professionals and non-governmental organizations working in the field. Examining the relationship between the scale and different variables could also provide more detailed information about the psychometric properties of the scale.

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Data Availability Data will be shared upon request.

Declarations

Ethical Approval All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

Informed Consent Informed consent was obtained from all individual participants included in the study.

Conflict of Interest The authors declare that they have no conflict of interest.

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